

MAIN FILE

March 27, 2007

MOTIVA
ENTERPRISES LLC

HAND DELIVERED

original to IOSW

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AVG

Mr. Curt A. Auzenne
Louisiana Department of Environmental Quality
Office of Environmental Services
P.O. Box 4313
Baton Rouge, Louisiana 70821-4313

RECEIVED

MAR 27 2007

LA DEPARTMENT OF
ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL SERVICES

Re: Motiva Enterprises LLC, Convent Refinery
Waste Water Treatment Surface Impoundments
Permit Renewal Application
GD-093-1513/P-0126
Agency Interest Number 2719 ✓
Permit Activity Number PER20010004 ✓

Dear Mr. Auzenne:

Motiva Enterprises LLC Convent Refinery (Motiva) hereby submits six (6) final copies of the complete Waste Water Treatment Surface Impoundment Solid Waste Permit application (P-0126). This application updates our August 2005 Permit renewal with the addition of Notice of Deficiency (NOD) responses submitted to your agency in November and December 2006. The August 2005 Permit renewal also included the addition of one new surface impoundment (the East Surge Pond) which is currently permitted as a clean stormwater pond under LDPES Permit No. LA0006041. Due to post-Katrina construction cost increases, the schedule for conversion of this pond into a process-contact water pond has been temporarily put on hold. Motiva will notify LDEQ upon our decision to proceed further with this project at a future date.

Should you have any questions regarding this matter, please contact Bill Paul of my staff at (225) 562-6328.

Sincerely,



Mark J. Koslicki
Environmental Manager

Enclosure



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Sincerely,

A handwritten signature in black ink, appearing to read "Mark J. Koslicki", written in a cursive style.

Mark J. Koslicki
Environmental Manager

Enclosure

**MOTIVA ENTERPRISES, LLC
CONVENT REFINERY
CONVENT, LOUISIANA
GD-093-1513**

**SOLID WASTE
STANDARD PERMIT
RENEWAL APPLICATION
FOR WASTEWATER TREATMENT
SURFACE IMPOUNDMENTS**

**SUBMITTED TO:
LOUISIANA DEPARTMENT OF
ENVIRONMENTAL QUALITY
SOLID WASTE DIVISION**

MARCH 2007

PREPARED BY:

**C-K ASSOCIATES, LLC
17170 PERKINS ROAD
BATON ROUGE, LOUISIANA 70810**

C-K ASSOCIATES' PROJECT NO. 3503WS

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INTRODUCTION

This Solid Waste Standard Permit Renewal Application has been prepared by C-K Associates, LLC, (C-K Associates), as professional consultants of our client Motiva Enterprises, LLC Convent Refinery (Motiva), Louisiana Plant. This document is being submitted as a Permit Renewal Application to Motiva's Solid Waste Standard Permit No. P-0126 for their existing, on-site Wastewater Treatment Units (WWTU) in accordance with the Louisiana Solid Waste Rules and Regulations which were promulgated on February 20, 1993. These facilities are classified as Type I Industrial Solid Waste Surface Impoundments, which were designed to function as temporary storage facilities for wastes generated at the various process units around the Refinery. The WWTU include Aeration Basins No. 1 and No. 2, the Recycle Pond, the South Surge Pond, and the East Surge Pond.

In the original application, Motiva included an Equalization Pond, which was closed in 1994 under a Louisiana Department of Environmental Quality (LDEQ) approved closure plan. Also, the South Contaminated Water Surge Pond was clean closed as a hazardous waste unit by consolidation of the contaminated materials into one section of the impoundment. The clean section was reopened as a solid waste facility, the South Surge Pond.

Wastewaters from the refinery are routed to one of the two American Petroleum Institute (API) Separators for the settling of particulate matter and skimming of free oil. Following separation in the APIs, wastewater is routed to the Equalization Tank (37T-316). Under high flow conditions, the flow can also be routed to the two Storm Surge Tanks (37T-314 and 37T-315) or the Upset Tank (37T-317).

Flow in excess of the hydraulic capacity of the APIs is automatically routed to the Storm Surge Sump and is either pumped into the refinery equalization/surge area, or is routed by gravity into the South Surge Pond for temporary storage. It should be noted that if API #2 is out of service, flow which would normally be routed through this API is pumped directly via the Storm Surge Sump to the equalization/surge area.

From the equalization/surge area tanks, the wastewater is routed into the Staged Activated Sludge Treatment Unit (SASTU) unit and from there into one of the two in ground aeration basins. Under normal operation, two stages of activated sludge treatment will be employed, first-stage treatment in the SASTU (37T-324 and 37T-325) and second-stage treatment in one of the two existing Aeration Basins No. 1 and No. 2. Treated water from the aeration basins is divided between three clarifiers (37V-350, -351, or -352) for solid/liquid separation. Clarified water from the clarifiers is directed to the Recycle Pond where it is stored prior to being pumped through pressure sand filters and discharged through Outfall 001 to the Mississippi River.

The biological sludge is allowed to settle and either recirculates back to the Aeration Basins or wasted sludge is pumped to the Aerobic Digester. The Aerobic Digester tank has a design retention time of 12 days. Air is sparged into the Aerobic Digester to assist in the reduction of the biosludge mass. The digested sludge is then disposed in the permitted Biosludge Landfarm.

The South Surge Pond serves as a basin to contain wastewater overflow in wet weather conditions, when the API Separator's influent flow rate is exceeded. During excessive wet

weather, overflow from the South Surge Pond will be routed to the East Surge Pond for temporary storage until it can be returned to the South Surge Pond for processing.

This March 2007 solid waste permit application has been developed in the format requested by the LDEQ. Responses to the October 10, 2006 and the December 13, 2006 Notices of Deficiency (NODs) have been incorporated into this application. It also reflects the addition of a Groundwater Sampling and Analysis Plan which has been previously approved by the LDEQ. Any responses associated with Groundwater Monitoring conditions should be evaluated based upon the Groundwater Sampling and Analysis Plan included as Appendix M of this consolidated permit application.

LAC 33:VII.519

PART I
PERMIT APPLICATION FORM
SOLID WASTE STANDARD PERMIT APPLICATION - PART I

(The form shall be completed in accordance
with the instructions found in LAC
33:VII.513.A.1)

- A. Applicant (Permit-Holder) Motiva Enterprises, LLC
- B. Facility Name: Wastewater Treatment Units (WWTU) (Aeration Basins No. 1 and No. 2. Recycle Pond, South Surge Pond, and East Surge Pond)
- C. Facility Location/Description: Onsite Surface Impoundments; Motiva is located on the east bank of the Mississippi River near the Sunshine Bridge.
- D. Location: Section 12 Township 11S Range 3E
Parish St. James
- Coordinates: Latitude - Degrees 30 Minutes 07 Seconds 00
Longitude - Degrees 90 Minutes 55 Seconds 00
- E. Mailing Address: P.O. Box 37. Convent, Louisiana 70723
- F. Contact: Mr. William P. Paul, P.E.
- G. Telephone: (225) 562-6328
- H. Type and Purpose of Operation: (check each applicable line)

Type I

Industrial Landfill ☐
Industrial Surface Impoundment ☒
Industrial Landfarm ☐

Type I-A

Industrial Incinerator Waste Handling Facility ☐
Industrial Shredder/Compactor/Baler ☐
Industrial Transfer Station ☐

Type II

Sanitary Landfill ☐
Residential/Commercial Surface Impoundment ☐
Residential/Commercial Landfarm ☐

Type II-A

Residential/Commercial Incinerator Waste Handling Facility ____

Residential/Commercial Shredder/Compactor/Baler ____

Residential/Commercial Transfer Station ____

Residential/Commercial Refuse-Derived Fuel ____

Type III

Construction/Demolition-Debris Landfill ____

Woodwaste Landfill ____

Compost Facility ____

Resource Recovery/Recycling Facility

Other

Describe _____

I. Site Status: Owned ☒ Leased _____ Lease Term ____ Years

(Note: If leased, provide copy of lease agreement)

J. Operation Status: Existing ☒ Proposed ____K. Total Acreage 3,900 Processing Acreage ____ Disposal Acreage 13

L. Environmental Permits: (List)

See Appendix A for the List of Environmental Permits.

M. Conformity with regional plans. Attach letter from the Louisiana Resource Recovery and Development Authority (LRRDA) stating that the facility is an acceptable part of the state-wide program.

According to the note below, because the WWTU disposal activity occurs entirely within the boundaries of the plant, which generates the solid waste, this section is not applicable.

(Note: In accordance with La. R.S. 30:2307. (b), LRRDA authority does not apply to solid waste disposal activity occurring entirely within the boundaries of a plant, industry, or business which generates such solid waste.)

N. Zoned: Yes ☐ No ☒ Zoning Requested

Zone Classification (See Appendix B). _____

(Note: If zoned, include zoning affidavit and/or other documentation stating that the proposed use does not violate existing land-use requirements.)

O. Types, Quantities, and Sources of Waste:

	Processing		Disposal	
	Onsite	Offsite	Onsite	Offsite
Residential				
Industrial		0	170,024 T/wk	0
Commercial				
Other				

P. Service Area:

List of Parishes: The Motiva Convent Refinery may accept minor quantities of off-site waste waters similar in characteristics to what is currently generated and treated within the refinery. The off-site companies generating this waste would typically be owned and/or operated by Motiva or Shell affiliated companies but may also include companies associated with Motiva or Shell company activities. These wastes would be primarily wastewaters from off-site petroleum refineries, petroleum pipelines, gas storage and treatment facilities, air and gas processing plants, ballast water from ships unloading at the facility dock, and bulk storage facilities which store petroleum and/or vegetable oil products. Specific examples include the adjacent Motiva Distribution Terminal and Tezcuco property, the Motiva Convent LPG Salt Dome Storage facility in Sorrento, Motiva's Norco refinery, the Shell Norco, St. Rose and Geismer Chemical plants, Shell Pipeline, and various Shell retail sites located throughout the state. Waste waters accepted for management will be in compliance with the limitations listed in the site LPDES permit, LA0006041, and U.S. Coast Guard Certificates of Adequacy for Receptor Facilities.

Statewide

Unlimited

Q. Proof of Operator's Public Notice - Attach proof of publication of the notice regarding the permit application submittal as required by LAC 33:VII.513.A.
See Appendix C.

- R. Certification: I have personally examined and am familiar with the information submitted in the attached document, and I hereby certify under penalty of law that this information is true, accurate, and complete to the best of my knowledge. I am aware that there are significant penalties for submitting false information, including the possibility of fine and/or imprisonment.

Signature _____

Date _____

Typed Name and Title **Doug P. Quinn, Refinery Manager, Convent Refinery**

(Note: Attach proof of the legal authority of the signee to sign for the applicant.)

As required by LAC 33:VII 519.R. Included as Appendix D of this application is a memorandum from the CEO of Motiva Enterprises, LLC designating the Refinery Complex Manager with legal authority to sign the permit application.

LAC 33:VII.521

**PART II
SUPPLEMENTARY INFORMATION**

**LOUISIANA ADMINISTRATIVE CODE
TITLE 33 - ENVIRONMENTAL QUALITY
PART VII - SOLID WASTE**

§521. Part II: Supplementary Information, All Processing and Disposal Facilities

The following information is required in the permit application for solid waste processing and disposal facilities. All responses and exhibits must be identified in the following sequence to facilitate the evaluation. Additionally, all applicable sections of LAC 33: VII. Chapter 7 must be addressed and incorporated into the application responses. If a section does not apply, the applicant must state that it does not apply and explain why.

A. **Location Characteristics.** Standards pertaining to location characteristics are contained in LAC 33:VII.709.A (Type I and II facilities), LAC 33:VII.717.A (Type I-A and II-A facilities, and LAC 33.719.A (Type III facilities).

1. The following information on location characteristics is required for all facilities:

a. **Area Master Plans-**a location map showing the facility, road network, major drainage systems, drainage-flow patterns, location of closest population center(s), location of the public-use airport(s) used by turbojet aircraft or piston-type aircraft, proof of notification of affected airport and Federal Aviation Administration as provided in LAC 33:VII.709.A.2, location of the 100-year flood plain, and other pertinent information. The scale of the maps and drawings must be legible, and engineering drawings are required.

As shown on the Vicinity Map and the Aerial Photograph included as Figures 1 and 2, respectively, Motiva is located on the Ascension-St. James Parish boundary line along the east bank of the Mississippi River, approximately 0.5 miles north of the intersection of Highways 44 and 70. The 3,900-acre Motiva site is composed of two parcels of land. The original parcel consists of 1,400 acres entirely within St. James Parish and is the site of the existing Refinery and WWTU. The second parcel consists of approximately 2,500 acres of currently undeveloped land lying entirely in Ascension Parish. The road network is shown on the Vicinity Map and the Aerial Photograph.

The site resides in the Mississippi Alluvial Valley, which is a deltaic plain; the river ceases to gather surface inflow and, under normal conditions, would become a distributing stream. Natural

levees were created by the deposition of sediment during periods of overbank flooding. The levees are highest near the river and generally slope away to merge with a backswamp area. Directly north of the Refinery site is an upland region which slopes southward and ends near the St. James Parish boundary line. The swamplands have maximum elevations of three to five feet National Geodetic Vertical Datum (NGVD) and are drained by a network of tributary streams and canals.

The location of the closest population center is the town of Convent, Louisiana, approximately eight miles southeast of the facility. The New Orleans International Airport is the nearest public-use airport used by turbojet aircraft or piston-type aircraft and is approximately 32 miles away in Kenner, Louisiana.

The WWTU are located outside the 100-year flood plain, which is shown on the Flood Zone Map included as Figure 3.

The roads providing access to the facility are all-weather roads that can meet the demands of the facility and have been designed to avoid, to the extent practicable, congestion, sharp turns, obstructions, or other hazards conducive to accidents; and the roads are adequate to withstand the weight of transportation vehicles.

Figure 4 is an Area Master Plan showing the facility, road network, major drainage systems, drainage-flow patterns, location of closest population center(s), location of the public-use airport(s) used by turbojet aircraft or piston-type aircraft, location of the 100-year flood plain, and other pertinent information. The scale of the maps and drawings is legible.

As shown on the map, the WWTU are not located within 10,000 feet of any public-use airport runway end used by turbojet aircraft or within 5,000 feet of any public-use airport runway end used by piston-type aircraft.

- b. **A letter from the appropriate agency or agencies regarding those facilities receiving waste generated off-site, stating that the facility will not have a significant adverse impact on the traffic flow of area roadways and that the construction, maintenance, or proposed upgrading of such roads is adequate to withstand the weight of the vehicles.**

The above citation is not applicable. The roads were designed to handle heavy industrial traffic servicing many industries in the

area. Any additional road traffic as the result of this application will be negligible. The majority of the wastewaters received from off-site will be by barge.

c. Existing Land Use-a description of the total existing land use within three miles of the facility (by approximate percentage) including, but not limited to:

The WWTU are located in Convent, St. James Parish, Louisiana. According to the St. James Parish Clerk of Court's office (Appendix B), there are no zoning requirements.

The following percentages were determined using a compiled data set from the United States Geological Survey, National Wetlands Research Center, which includes data from the Louisiana Gap Analysis Program (GAP), National Wetland Inventory System (NWIS), and Color Infrared (CIR) Aerial Photography.

i. residential

Approximately 3% of the land within three miles of Motiva's WWTU is used for residential purposes.

ii. health-care facilities and schools

Approximately 1% of the land within three miles of Motiva's WWTU is used for health care facilities and schools.

iii. agricultural;

Approximately 55% of the land within three miles of Motiva's WWTU is used for agricultural purposes.

iv. industrial and manufacturing;

Approximately 7% of the land within three miles of Motiva's WWTU is used for industrial and manufacturing purposes.

v. other commercial;

Approximately 1% of the land within three miles of Motiva's WWTU is used for other commercial purposes.

vi. recreational; and

Approximately 1% of the land within three miles of Motiva's WWTU is used for recreational purposes.

vii. undeveloped.

Approximately 32% of the land within three miles of Motiva's WWTU is undeveloped.

- d. Aerial Photograph-a current aerial photograph, representative of the current land use, of a one-mile radius surrounding the facility. The aerial photograph shall be of sufficient scale to depict all pertinent features. (The administrative authority may waive the requirement for an aerial photograph for Type III facilities.)**

A 2004 Aerial Photograph, representative of the current land use, is included as Figure 2. The Aerial Photograph includes a one-mile radius surrounding the facility and is of sufficient scale to depict all pertinent features.

- e. Environmental Characteristics-the following information on environmental characteristics:**

- i. a list of all know historic sites, recreation areas, archaeological sites, designated wildlife-management areas, swamps and marshes, wetlands, habitats for endangered species, and other sensitive ecologic areas within 1,000 feet of the facility perimeter or as otherwise appropriate;**

These facilities are located within the confines for the Motiva facility in Convent, Louisiana. There are no recreation areas, wildlife management areas, swamps and marshes, or other sensitive ecological areas within 1,000 feet of the facility.

Correspondence from the State of Louisiana, Department of Culture, Recreation & Tourism, Office of Cultural Development, Division of Archaeology, dated October 28, 2004 (Appendix E), states that there are two known archaeological sites located near the Motiva solid waste units. The letter states that activities at biosludge landfarm would have no adverse affect to either known site. Because of the close proximity of the biosludge

landfarm to the WWTU and the nature of the changes proposed in this permit application, Motiva believes that the conversion of the Storm Water Pond to the East Surge Pond will also have no adverse affect to either site.

Correspondence from the State of Louisiana, Department of Wildlife and Fisheries (LDWF), dated September 28, 2004 (Appendix E), states that the WWTU are located within the coastal zone. However, due to the nature of the changes proposed in this permit application, Motiva believes that the conversion of the Storm Water Pond to the East Surge Pond will have no adverse affect on the coastal zone. The LDWF letter also states that a bald eagle nest was observed in the area of the WWTU in 2003. However, Motiva believes that the conversion of the Storm Water Pond to the East Surge Pond will have no affect on the species. The correspondence also states that there are no other rare, threatened, or endangered species or critical habitats in the area, nor are there any state or federal parks, wildlife refuges, scenic streams, or wildlife management areas.

The U.S. Army Corps of Engineers (Corps) jurisdictional determination for the area identified within 1,000 feet of the Motiva Refinery solid waste facilities, dated November 3, 2006, is provided in Appendix E. Based on the Corps' determination, there are no jurisdictional wetlands within 1,000 feet of the subject site.

- ii. **documentation from the appropriate state and federal agencies substantiating the historic sites, recreation areas, archaeological sites, designated wildlife-management areas, wetlands, habitats for endangered species, and other sensitive ecologic areas within 1,000 feet of the facility; and**

The confirmation letters from these agencies are included as Appendix E. Please refer to the response given for LAC33:VII.521.A.1.e.i.

- iii. **a description of the measures planned to protect the areas listed from the adverse impact of operation at the facility;**

This citation is not applicable. No such areas are listed for protection. Likewise, the requirement of LAC

33:VII.709.A.3 for *“effective barriers that eliminate probable adverse impacts from facility operations”* is not applicable. Correspondence from the State of Louisiana, Department of Culture, Recreation & Tourism, Office of Cultural Development, Division of Archaeology, dated October 28, 2004 (Appendix E), states that there are two known archaeological sites located near the Motiva solid waste units. The letter states that activities at biosludge landfarm would have no adverse affect to either known site. Because of the close proximity of the biosludge landfarm to the WWTU and the nature of the changes proposed in this permit application, Motiva believes that the conversion of the Storm Water Pond to the East Surge Pond will also have no adverse affect to either site.

f. A wetlands demonstration, if applicable, as provided in LAC 33:VH.709.A.4.

The above citation is not applicable. The Storm Water Pond is being converted to the East Surge Pond. There are no wetlands associated with this existing storm water facility. The remaining WWTU are existing facilities which have received waste prior to October 9, 1993.

g. Demographic Information-the estimated population density within a three-mile radius of the facility boundary, based on the latest census figures.

Most recent data indicates that the population density within a three-mile radius of the facility is 73 persons/square mile. The data were obtained with the use ESRI Business Information Solutions Census 2000 Summary Profile, which is based on 2000 U.S. Census Data (Appendix F). The coordinates of the WWTU were input into the program and a radius of three miles was specified. Using these parameters, a population of 2,074 persons was given for the 28 square mile area.

2. The following information regarding wells, faults and utilities is required for Type I and II facilities:

a. Wells. Map showing the locations of all known or recorded shot holes and seismic lines, private water wells, oil and/or gas wells, operating or abandoned, within the facility and within 2,000 feet of the facility perimeter and the locations of all public water systems, industrial water wells, and irrigation wells within one mile of the facility. A plan shall be provided

to prevent adverse effects on the environment from the wells and shot holes located on the facility.

The Well Location Map (Figure 5), depicts the location of currently known water wells, operating or abandoned, and all oil and/or gas wells, operating or abandoned, within a 2,000-foot radius of the Motiva's WWTU and all known industrial and irrigation wells within a one-mile radius of the site. Specific information concerning well owners, well use, and well depth is provided in Table 1 (Well Data).

b. Faults

- i. **scaled map showing the locations of all recorded faults within the facility and within one mile of the perimeter of the facility; and**

A review of the Fault and Salt Map of South Louisiana, 1982, W.E. Wallace, concerning the geology of Ascension and St. James Parishes indicate that no faults (surface or subsurface) with displacement during Holocene time exist within the facility or within one mile of the perimeter of the facility.

- ii. **demonstration, if applicable, of alternative fault setback distance as provided in LAC 33:VII.709.A.5.**

The above citation does not apply. There are no faults in the area with displacement during Holocene time. No alternative fault setback is necessary.

- c. **Utilities. Scale map showing the location of all pipelines, power lines, and right-of-ways within the site.**

Drawings showing the location of all pipelines, power lines, and right-of-ways within the site can be found in Figure 6.

- B. Facility Characteristics. Standards concerning facility characteristics are contained in LAC 33:VII.709.B (Type I and II facilities), LAC 33:VII.717.B (Type I-A and II-A facilities), and LAC 33:VII.719.B (Type III facilities). A facility plan, including drawings and a narrative, describing the information required below must be provided.**

- 1. The following information is required for all facilities:**

- a. **elements of the process or disposal system employed, including, as applicable, property lines, original contours**

(shown at not greater than five-foot intervals), buildings, units of the facility, drainage, ditches and roads;

Motiva property lines, buildings, units of the facility, roads, and other elements of the site are shown on the Area Master Plan (Figure 4) and the General Plant Overall Plot Plan (Figure 7); and the WWTU are shown on the General Waste Water Treating drawing included as Figure 8.

The WWTU to be permitted consist of Aeration Basin No. 1, Aeration Basin No. 2, the Recycle Pond, the South Surge Pond, and the East Surge Pond.

The South Surge Pond was partially closed as a hazardous waste unit in 1994 under an LDEQ approved closure plan and continues to be operated as a solid waste facility.

The concrete tanks (Activated Sludge Clarifiers) were designed and constructed to conform with the American Concrete Institutions' (ACI) Code ACI 325, Recommended Practice for Design of Concrete Pavements; ACI 318, Building Code Requirements; and to the ACI Manual of Concrete Practice.

The Aerobic Digester Tanks were designed and constructed to conform to the API Code 650, Design and Construction of Steel Tanks.

Figures 9 and 10 show typical geologic cross sectional information of the clarifier and digester tanks.

Wastewaters from the refinery are routed to one of the two API Separators for the settling of particulate matter and skimming of free oil. Following separation in the APIs, wastewater is routed to the Equalization Tank (37T-316). Under high flow conditions, the flow can also be routed to the two Storm Surge Tanks (37T-314 and 37T-315) or the Upset Tank (37T-317).

Flow in excess of the hydraulic capacity of the APIs is automatically routed to the Storm Surge Sump and is either pumped into the refinery equalization/surge area, or is routed by gravity into the South Surge Pond for temporary storage. It should be noted that if API #2 is out of service, flow which would normally be routed through this API is pumped directly via the Storm Surge Sump to the equalization/surge area.

From the equalization/surge area tanks, the wastewater is routed into the Staged Activated Sludge Treatment Unit (SASTU) unit

and from there into one of the two in ground aeration basins. Under normal operation, two stages of activated sludge treatment will be employed, first-stage treatment in the SASTU (37T-324 and 37T-325) and second-stage treatment in one of the two existing Aeration Basins No. 1 and No. 2. Treated water from the aeration basins is divided between three clarifiers (37V-350, -351, or -352) for solid/liquid separation. Clarified water from the clarifiers is directed to the Recycle Pond where it is stored prior to being pumped through pressure sand filters and discharged through Outfall 001 to the Mississippi River.

The biological sludge is allowed to settle and either recirculates back to the Aeration Basins or wasted sludge is pumped to the Aerobic Digester. The Aerobic Digester tank has a design retention time of 12 days. Air is sparged into the Aerobic Digester to assist in the reduction of the biosludge mass. The digested sludge is then disposed in the permitted Biosludge Landfarm. Sampling analysis of the wastestream is included in the Biosludge Analyses, Appendix G.

The WWTU are operated so as to keep the liquid level to a practical minimum at all times. In no case shall the freeboard be less than two feet. A gauge indicates the freeboard level of the impoundments at all times. The freeboard requirements are inspected daily.

Odor emanating from the WWTU is not expected to be a problem, due to sanitary waste comprising <3% of the total wastestream influent. Based on Motiva's past wastewater treatment experience, there are typically no odors associated with the wastewater treatment process. In accordance with LAC 33:VII.521.H.1.g, monthly surveys are conducted to identify the potential presence of strong odors. The nearest residences to the WWTU are approximately 0.5 miles away; any odor complaints, if any, are investigated and action is taken, as appropriate.

The highest natural elevations on the entire Motiva site are about 25 feet NGVD (114 feet plant datum) and occur along the top of the levee near the river. Immediately eastward of the levee the elevations are lower, on the order of 20 to 24 feet NGVD (109 to 113 feet plant datum). The site slopes away from the river for a distance of two to three miles to an elevation of about three feet NGVD (92 feet plant datum). The slope continues to the outer edges of the backswamp until an elevation of about two feet NGVD is reached; and the interior of the backswamp is virtually level at an elevation varying between 0.7 and 2.0 feet NGVD

(89.7 to 91.0 feet plant datum). The surface elevations of the specific wastewater treatment site range between 11 and five feet NGVD (100 to 94 feet plant datum), as illustrated on the Process Flow Diagram Hydraulic Profile General Wastewater Treating drawing included as Figure 12.

Existing natural surface features within the alluvial valley are the consequence of river activity. These significant landforms developed in the past during periods of overbank flow. Sediment-laden waters overflowing from the river deposited their greatest load closely adjacent to the banks. Sands and coarse silts deposited in low ridges paralleling each bank are known as natural levees and have steep riverside slopes and flat landside slopes. Natural levees provide the most marked natural topographic feature of the site.

b. the perimeter barrier and other control measures;

The Refinery is completely surrounded by a seven-foot chain link fence, with strands of barbed wire at the top, to deter unauthorized ingress or egress and to prevent entry by domestic livestock. The Refinery's fenced inside perimeter is sufficiently cleared and lighted to permit security patrol by vehicle or foot. Floodlighting has been installed at the Storehouse and Administration Gates as well as at strategic areas within the Plant and along the perimeter.

Vehicles entering or leaving the Refinery must pass through the Administration Gate or Storehouse Gate, which is guarded by contracted security guards 24 hours per day, 365 days per year. The gates (operated from the guardhouses) are controlled by electromechanical closure devices. If the security guard must leave the guardhouse, the gate is closed and secured. All other Plant gates are locked when not in use.

c. a buffer zone;

Motiva maintains, at a minimum, a 200-foot buffer zone located between the adjoining landowners' property lines and any buildings, facilities, or wastewater treatment units. The buffer zone can be seen on the Aerial Photograph included as Figure 2 and the Area Master Plan included as Figure 4.

d. **fire-protection measures;**

The Fire and Emergency Organization of the Louisiana Plant is headed by a Fire Chief or Acting Chief and consists of the following:

1. A Shift Fire Company which responds to all fires or emergency calls, night or day, seven days a week.
2. An organization which is available for and responds to all fire or emergency calls during regular working hours and which reports on call-out during off-duty hours.

Annually, all employees assigned to the Fire Organization are given refresher instructions in fire training. Further information regarding the Fire Organization can be found in the following documents which are maintained onsite:

- Louisiana Plant Emergency Plans Manual
- Louisiana Plant Fire Manual
- Louisiana Plant Oil and Hazardous Waste Spill Response Plan
- Louisiana Plant Hazard Waste Contingency Plan and Emergency Procedures

Indoctrination of all new employees includes familiarization of Fire Organization and training in the use of fire equipment as provided in the area to which the employee is assigned.

The firewater system is designed to deliver 3,000 gpm at 125 PSIG when two of the five pumps provided are operating. Design delivery rates of the firefighting equipment are as follows:

Hydrants	500 gpm
1 ½ " Hose reels	75 gpm
Monitors	400 gpm

The firewater system is a system of looped headers, mains, and laterals supplying water to hydrants, monitors, and hydrants with pumper nozzles located in unit process areas and off-plot areas, including the tank farm and tanker wharf. Supplemental assistance from local volunteer fire departments is available.

Should an accident causing injury occur, immediate medical care will be provided by the onsite medical facility, or at one of the two area hospitals (see Appendix X).

e. **landscaping and other beautification efforts;**

Motiva's existing WWTU are located within the boundaries of the Refinery, which generate the waste to be disposed. Landscaping and other beautification efforts are not required by LAC 33:VII.709.B.4.

f. **devices or methods to determine, record, and monitor incoming waste;**

Any wastewater received from off-site will be waste generated by an Alliance facility. Records of these shipments will be maintained at the site.

East Surge Pond

Motiva plans to convert the Clean Storm Water Pond, located immediately east of the South Surge Pond, into the East Surge Pond. The impoundment will only serve as an overflow location for the South Surge Pond in the event of heavy rainfall or flooding.

South Surge Pond

The eastern portion of the South Surge Pond is closed. Therefore, this portion of the unit accepts no additional solid waste.

The open portion of the South Surge Pond (South Pond) is primarily used for additional surge capacity in the WWTU. During periods of heavy rain, process-contact water from the refinery is diverted to the South Surge Pond by an overflow from the API-2 Diversion Box. It is designed to receive wet weather flow, most commonly when the Waste Water Treatment Unit tank storage capacity is limited, or when the wet weather flow rates exceed pumping capacity. Before any other streams may be discharged into the South Pond, the Safety, Health, and Environmental Department is contacted for approval.

Disposal of solid waste in the South Pond primarily occurs by the settling of solids from wastewaters. These solids may be removed on an as-needed basis to maintain operational capacity. When the solids are removed from the South Pond, an approximate amount is determined.

Aeration Basin 1 and Aeration Basin 2

The purpose of the aeration basins is to provide for the decomposition of organic material by bacteria. In order to accomplish this, the wastewater and bacteria are mixed and aerated to maintain a fairly homogenous mixture of solids and liquids. Facilities are designed downstream of the aeration basins for clarification of the treated wastewater. Some incidental settling of solids such as clay, dirt, sand, or other material may occur within the aeration basins. If necessary, solids may be removed on an as-needed basis to maintain operational capacity. When the settled solids are removed from the aeration basins, an approximate amount is determined.

Recycle Pond

The Recycle Pond (also known as Final Settling Pond or Final Effluent Pond) receives wastewaters prior to discharge through a permitted LPDES outfall. By design, these wastewaters should be typically low in solids content. In 1997, the Recycle Pond was cleaned out with 1,710 wet weight tons of solids removed during a dredging operation. Solids may be removed on an as-needed basis to maintain an operational capacity necessary for compliance with discharge permit limits.

Approximately 10,584 tons of sludge were removed from the Recycle Pond in June 2003 and beneficially reused on-site as soil amendment on top of the closed hazardous waste landfarm (LTU-2). This beneficial reuse was conducted in accordance with LAC 33:VII.303.k, as approved by the LDEQ-Office of Environmental Assessment in a letter dated May 29, 2003.

g. NPDES discharge points (existing and proposed); and

Motiva currently discharges under LPDES Permit No. LA0006041 (Appendix H). Motiva's current LPDES permit was issued by the LDEQ on May 24, 2004, and expires on June 1, 2009.

Motiva has three LPDES outfalls that serve the Refinery. Treated wastewater from the wastewater treating system discharges into the Mississippi River through Outfall 001. The uncontaminated site runoff from the developed areas of Motiva is collected in ditches and routed to the Storm Water Pond before being discharged into the St. James Canal through Outfall 002. Outfall 002 is located at the end of a ditch which leads to the St. James Canal. Outfall 003 is the continuous discharge of the underflow

stream from the raw river water intake clarification system and is located adjacent to Outfall 001.

The uncontaminated site runoff from the undeveloped areas of the Motiva site flows directly through unnamed ditches into the St. James Canal.

h. other features, as appropriate.

The Administrative Authority has not requested a description of other features of facility characteristics.

2. The following information is required for Type I and II facilities:

a. areas for isolating nonputrescible waste or incinerator ash, and borrow areas; and

This citation does not apply. Motiva has not designated any areas for isolating nonputrescible waste, incinerator ash, and borrow areas.

b. location of leachate collection/treatment/removal system.

The leachate collection/treatment/removal system is located beneath Aeration Basins No. 1 and No. 2 within a 12-inch layer of sand containing a 3-inch perforated pipe. Leachate may be routed to the Neutralization Sump for treatment and discharge.

C. Facility Surface Hydrology. Standards governing facility surface hydrology are contained in LAC 33:VII.711.A (Type I and II landfills), LAC 33:VII.713.A (Type I and II surface impoundments), LAC 33:VII.715.A (Type I and II landfarms), LAC 33:VII.717.C. (Type I-A and II-A facilities), and LAC 33:VII.719.C (Type III facilities).

1. The following information regarding surface hydrology is required for all facilities:

a. a description of the method to be used to prevent surface drainage through the operating areas of the facility;

The WWTU have a series of ditches flowing west to east which drain surface runoff into a ditch routed to the St. James Canal as shown on the General Waste Water Treating diagram, included as Figure 8.

b. a description of the facility runoff/run-on collection system;

During storm conditions, the site run-on is pumped by a 1,000-gallon-per-minute (gpm) pump to the South Surge Pond and treated in the wastewater treatment unit.

The uncontaminated site runoff from the developed areas of Motiva is collected in unnamed ditches and routed to the Storm Water Pond before being discharged through Outfall 002. Outfall 002 is located at the end of an unnamed ditch which leads to the St. James Canal, as shown on the General Plant Overall Plot Plan, included as Figure 7.

In the event of excessive rain, overflow from the South Surge Pond will be discharged to the East Surge Pond.

The uncontaminated site runoff from the undeveloped areas of the Motiva site flows directly through unnamed ditches into the St. James Canal.

c. the maximum rainfall from a 24-hour/25-year storm event;

According to the Louisiana Office of Climatology, the greatest 24-hour rainfall in the last 25 years at Donaldsonville gauging station took place on April 8, 2003 and totaled 9.40 inches. The greatest ever recorded 24-hour rainfall at that site was 14.47 inches, recorded on August 26, 1926.

d. the location of aquifer recharge areas in the site or within 1,000 feet of the site perimeter, along with a description of the measures planned to protect those areas from the adverse impact of operations at the facility; and

According to the 1998 map entitled "Aquifer Recharge Potential of the Baton Rouge Quadrangle," prepared for LDEQ's Groundwater Protection Division (GPD), the entire Motiva facility and areas within 1,000 feet of the perimeter are located in non-recharging area of the Alluvial Freshwater Aquifer System.

Therefore, the LAC 33: VII.713. A.2 requirement for protecting the aquifer recharge zone within 1,000 feet of the facility is not applicable.

e. if the facility is located in a flood plain, a plan to ensure that the facility does not restrict the flow of the 100-year base flood or significantly reduce the temporary water-storage capacity of the flood plain, and documentation indicating that the

design of the facility is such that the flooding does not affect the integrity of the facility or result in the washout of solid waste.

As shown on the Flood Zone Map, Figure 3, the Plant lies in Zone C, an area of minimal flooding that is unaffected by the 100-year flood plain. The Motiva facility has not flooded since operations began in 1967.

- D. Facility Geology. Standards governing facility geology are contained in LAC 33:VII.709.C (Type I and II facilities), LAC 33:VII.717.D (Type I-A and II-A facilities), and LAC 33:VII.719.D (Type III facilities).**

The borings and monitoring wells for the Aeration Basins No. 1 and No. 2, the Recycle Pond, and the South Surge Pond were completed prior to the preparation of the Construction of Geotechnical Boreholes and Groundwater Monitoring Systems Handbook, dated May 1993 (updated December 2000). The borings and monitoring wells for the East Surge Pond were completed in April 2005 in accordance with the Handbook, including depicting the first water encountered.

- 1. The following information regarding geology is required for Type I and Type II facilities:**

- a. isometric profile and cross-sections of soils, by type, thickness, and permeability;**

The subsoils underlying the Motiva WWTU are generally uniform and consist primarily of tan and gray clays and silty clays underlain by greenish-gray or gray clays and silty clays with occasional strata of silty sands and sand. The surface soils consist primarily of medium stiff to stiff gray and tan clays and silty clays intermixed with occasional discontinuous layers of soft silty clay and clay and medium compact tan and gray clayey silt. The soils continue to an approximate 35 to 40 foot depth near the river to an approximate 23 to 27 foot depth toward the rear of the site. These surface materials may be natural-levee deposits or re-worked Pleistocene materials. Beginning at depths of approximately 23 feet below ground surface (bgs) at the rear of the site to approximately 40 feet bgs near the front of the site, stiff to very stiff tan and gray clay or silty clays were encountered, and the top of this stratum is identified as the surface of the Pleistocene formation. These Pleistocene clays continue to depths of approximately 65 to 80 feet bgs, and are underlain by layers of medium stiff to very stiff gray, greenish-gray or bluish-gray clays intermixed with occasional layers of

sand and sandy clays. An isometric soil profile of the regional geology is presented in Figure 13 (Area Fence Diagram). Soil types and thickness vary across the site and can be measured on this profile. A geologic cross section was prepared for the landfarm area and is included as Figure 14.

A total of eight geological cross-sections are shown in Figure 16. Depths of soil borings and screened intervals of monitoring wells are shown within each cross-section. In addition to the screened interval being depicted on the cross-sections, the sand filter pack intervals are also shown. The sand filter pack interval is the interval actually being monitored by the associated monitor well.

Additional information for the area under the site for the proposed East Surge Pond can be found in Appendix Y.

- b. logs of all known soil borings taken on the facility and a description of the methods used to seal abandoned soil borings;**

Motiva has 10 monitoring wells (SW-1 to SW-10) and four stand-by wells (MW-1 to MW-4) placed at the perimeter of the WWTU. The logs for the wells/soil borings are included in Appendix I. All future soil borings at the site that are not required to be converted to monitoring wells will be abandoned by grouting to ground surface with a cement-bentonite grout mixture. The mixture ratio used to seal the boreholes will be seven gallons of water combined with one (94-pound) bag of cement and 2% (two pounds) of powdered bentonite. Appropriate time will be allowed for the grout to harden and a cement cap will then be placed over each borehole and covered with compacted soil.

Boring logs for borings and monitoring wells in the WWTU area are included in Appendix I. Appendix J contains monitor well cross-sections (as-built diagrams) of monitor wells SW-7 - SW-10. In accordance with 521.D.1.a, the boring logs for soil borings and monitoring wells installed in the vicinity of WWTU have been used to develop updated cross-sections (Figure 16). A complete set of boring logs and monitor well cross-section diagrams will be incorporated into the Permit Renewal Application.

Monitoring wells LF-1 through LF-7, depicted on Figure 15, were planned monitor wells that were never installed. Figure 15 shows borings and monitor wells installed near the WWTU.

facility. The locations for monitoring wells LF-1 through LF-7 have been removed.

To adequately characterize the soils in the area of the East Surge Pond, Motiva installed four soil borings and two monitoring wells. Boring logs and other information is provided in Appendix Y.

- c. **results of tests for classifying soils (moisture contents, Atterberg limits, gradation, etc.), measuring soil strength, and determining the coefficients of permeability, and other applicable geotechnical tests;**

The results of all laboratory tests on samples from the monitoring well installations around the WWTU are presented on the logs of the borings, included in Appendix I. The legends of the boring logs, along with the laboratory testing program, test procedures and permeability field test data, are also included in Appendix I.

Additional information for the area under the site for the proposed East Surge Pond can be found in Appendix Y.

- d. **geologic cross-section from available published information depicting the stratigraphy to a depth of at least 200 feet below the ground surface;**

Figure 13 is a cross section depicting the stratigraphy to a depth of 900 feet bgs. This information was obtained from Louisiana Geological Survey Water Resources Bulletin No. 7.

- e. **for faults mapped as existing through the facility, verification of their presence by geophysical mapping or stratigraphic correlation of boring logs. If the plane of the fault is verified within the facility's boundaries, a discussion of measures that will be taken to mitigate adverse effects on the facility and the environment;**

The above citation is not applicable. According to published literature (Fault and Salt Map of South Louisiana, 1966), no faults (surface or subsurface) exist at the facility.

- f. **for a facility located in a seismic impact zone, a report with calculations demonstrating that the facility will be designed and operated so that it can withstand the stresses caused by the maximum ground motion, as provided in LAC 33:VH.709.C.2; and**

The WWTU are not located in a seismic impact zone (according to the Louisiana Geological Society Water Resources Bulletin No. 7, "Ground Water in the Geismer-Gonzales Area, Ascension Parish, Louisiana" (Plate 1, dated October 1965)).

- g. for a facility located in an unstable area, a demonstration of facility design as provided in LAC 33:VII.709.C.3.**

A demonstration of facility design is not required. The Aeration Basins No. 1 and No. 2, the Recycle Pond, the South Surge Pond, and the East Surge Pond are not located in an unstable area.

- 2. The following information regarding geology is required by Type III woodwaste and construction/demolition-debris facilities:**

The above citation is not applicable. The WWTU are Type I surface impoundments.

E. Facility Subsurface Hydrology. Standards governing facility subsurface hydrology are contained in LAC 33:VII.715.A (Type I and II landfarms).

- 1. The following information on subsurface hydrology is required for all Type I facilities and Type II landfills and surface impoundments:**

- a. delineation of the following information for the water table and all permeable zones from the ground surface to a depth of at least 30 feet below the base of excavation:**

- i. areal extent beneath the facility;**

The first permeable zone consists of alternating clayey silt/silty sand layers and is continuous beneath the facility.

Updated geological cross-section maps have been constructed using boring and monitor well data from the vicinity of the WWTU and are included in Figure 16. As can be seen from the geological cross-sections, six general geological units are present within the upper 160 feet. The six general units are described below:

- 1. A fill soil is generally located from 0-4 feet bgs;
- 2. A continuous clay layer is generally located from 4-12 feet bgs;
- 3. A silty clay/clayey silt layer is generally located from 12-20 feet bgs; and

4. A clay layer with occasional silt content or lenses is generally located from 20-85 feet bgs.
5. A silt/sand layer is generally located below 85 feet bgs.
6. Boring MW-1 indicates stiff bluish-gray silty clay from 110 feet to 160 feet bgs (total depth of boring).

Intermediate and discontinuous silt/silty clay/clayey silt lenses are present throughout the entire stratigraphy. Depths of the above outlined geologic units at specific points are identifiable on the geologic cross-sections included in Figure 16. In general, descriptions presented in the Geotechnical Investigation report were consistent with the above subsurface description (Appendix Y).

ii. thickness and depth of the permeable zones and fluctuations;

The first permeable zone extends from an upper boundary of approximately 12 feet bgs to a lower boundary of approximately 20 feet bgs. See the response for 521.E.1.a.i.

iii. direction (s) and rate(s) of groundwater flow based on information obtained from piezometers and shown on potentiometric maps; and

Monitoring wells SW-1 to SW-16 monitor the uppermost groundwater-bearing zone. Based on the potentiometric maps constructed as part of the Annual Groundwater Monitoring Report, the direction of groundwater flow in the upper permeable zone is south to southeast. The most recent potentiometric map for wells SW-1 to SW-6, SW-7 to SW-10, and SW-11 to SW-16 from April 2005, is included as Figures 17, 18, and 19, respectively.

The uppermost water-bearing permeable zone is the silty clay/clayey silt layer which is generally located between 12 to 20 ft. bgs (see Figure 16, Geologic Cross-Sections for the exact depth at specific locations). The base of this uppermost water-bearing zone is poorly defined, as there is no drastic change in lithology with depth; rather there is generally a gradual increase in clay content with depth in the confining zone.

Surface water levels in the open portion of the South Surge Pond and the Recycle Pond were surveyed on January 4, 1999, while the ponds were at typical operating levels. Both of these impoundments are earthen and extend into the uppermost water-bearing zone. Therefore, they are interpreted to be hydraulically connected to the shallow groundwater. While the water levels in the South Surge Pond do fluctuate, the water level is generally maintained in a pumped down condition, to allow for storage during storm events. Figure 20 is a groundwater potentiometric map developed from the above-mentioned data, depicting groundwater contours near the South Surge Pond. The Aeration Basins are not presumed to be hydraulically connected, due to the synthetic liner system deployed in each. Using this groundwater and impoundment water elevation data, the general site groundwater gradient for the facility ranged from 0.001 to 0.006 feet/feet toward the southeast. In the vicinity of the hydraulically connected impoundments, the gradient was computed to increase to approximately 0.1 feet/feet radially into the impoundments. Calculations for groundwater velocity gradients are included in Appendix K.

The lower confining unit is the clay/silty clay layer generally located below 20 feet bgs. The upper delineation of this unit is poorly defined, as there is no drastic change in lithology with depth, rather there is generally a gradual increase in clay content with depth in the confining zone. Although silt and silty clay lenses and layers were observed in this confining layer, the lenses and layers are not connected and are discontinuous throughout the facility.

The uppermost aquifer for this site is the silty/sandy zone located at a general depth starting at 85 feet and extending to the maximum depth of boring installation of approximately 120 feet bgs. Only boring MW-1 extends through the uppermost aquifer and indicates a stiff clay/silty clay unit that begins at a depth of approximately 110 feet bgs at that location and extends to the total depth of exploration (160 feet bgs).

Using the geological cross-sections, the clay soils present from approximately 20 to 85 feet bgs provides a thick low permeability layer between the uppermost water-bearing

permeable zone and any underlying aquifer below the confining clay layer. In the "Evaluation of the Uppermost Aquifer" report (prepared by NUS Corporation, July 1985), clays at the site were reported with vertical permeabilities ranging from 1.7×10^{-9} cm/sec to 1.9×10^{-8} cm/sec. These low vertical permeabilities indicate that no significant vertical movement of water exists through the clay layer.

iv. any change in groundwater flow direction anticipated to result from any facility activities.

Based on data accumulated during semiannual groundwater sampling events, facility activities have not impacted groundwater flow direction.

b. delineation of the following, from all available information, for all recognized aquifers which have their upper surfaces within 200 feet of the ground surface:

i. areal extent;

Groundwater in the vicinity of the Plant site is found in several aquifers separated by clay and silt layers. Located at about 150 to 350 feet bgs is a continuous shallow aquifer in the older deltaic deposits of the Pleistocene age. Discontinuous alluvial deposits are found close to the Mississippi River, and younger deltaic deposits include natural-levee and point bar deposits, limited in extent but hydrologically important.

ii. thickness and depth to the upper surface;

Please refer to the response given for LAC 33:VII.521.E.1.b.i.

iii. any interconnection of aquifers; and

Based on published regional geological data in the Louisiana Geological Survey Water Resources Bulletin No. 7, "Ground Water in the Geismer-Gonzales Area, Ascension Parish, Louisiana" (Plate 1, dated October 1965), these aquifers are not hydraulically connected.

iv. direction(s) and rate(s) of groundwater flow shown on potentiometric maps.

Directional flow in the alluvial deposits is generally south to southeast, as noted in the Water Resources Bulletin No. 7, Department of Conservation, Louisiana Geographical Survey. The Gonzales aquifer flows generally toward the Mississippi River (southwest) during most of the year, when the river is low. During the annual high river stage, flow is away from the Mississippi River in an easterly direction.

2. **The following information on subsurface hydrology is required for Type II landfarms. Delineation of the following information for the water table and all permeable zones from the ground surface to a depth of at least 30 feet below the zone of incorporation:**

The above citation is not applicable. This is a Permit Renewal Application for Type I surface impoundments.

F. Facility Plans and Specifications. Standards governing facility plans and specifications are contained in LAC 33:VII.711.B (Type I and II landfills), LAC 33: VII.713.B (Type I and II surface impoundments), LAC 33:VII.715.B (Type I and II landfarms), LAC 33:717.E (Type I-A and II-A facilities), LAC 33:VII.721.A (Type III construction and demolition debris and woodwaste landfills), LAC 33:VII.723.A (Type III composting facilities), and LAC 33:VII.725.A (Type III separation facilities). Standards for groundwater monitoring are contained in LAC 33:VII.709.E (Type I and II facilities).

1. **Certification - The person who prepared the permit application must provide the following certification:**

"I certify under penalty of law that I have personally examined and I am familiar with the information submitted in this permit application and that the facility as described in this permit application meets the requirements of the Solid Waste Rules and Regulations. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment."

Certification is included as Appendix L.

2. **The following information on plans and specifications is required for Type I and II facilities:**
 - a. **detailed plan-view drawing(s) showing original contours, proposed elevations of the base of units prior to installation of the liner system, and boring locations;**

Typical cross sections of Aeration Basins No. 1 and No. 2, Recycle Pond, and the South Surge Pond are included as Figures 21, 22 and 23. The original grade of the area and the final elevations of the facilities are noted on these figures. The cross sections of Aeration Basins No. 1 and No. 2 depict the lining used in the WWTU. A plan-view of the facility, including any soil borings and monitoring well locations, is included as Figure 15.

Information concerning the East Surge Pond is included as Appendix Y.

- b. detailed drawings of slopes, levees, and other pertinent features; and**

Typical cross sections of Aeration Basin No. 1 and No. 2, the Recycle Pond, and the South Surge Pond are included as Figures 21, 22 and 23.

Information concerning the East Surge Pond is included as Appendix Y.

- c. the type of material and its source for levee construction. Calculations shall be submitted demonstrating that an adequate volume of material is available for the required levee construction.**

The above citation is not applicable. The WWTU are located outside the 100-year flood zone.

Future maintenance and/or modifications of the dikes necessary to ensure compliance with permit conditions and to maintain facility performance will be done as required during the life of the WWTUs. Selection of all materials for maintenance activities will be accomplished utilizing established industry practices and may be different from the materials used at the time of construction. Materials used in any future levee maintenance activities may come from on-site or off-site sources.

Information concerning the East Surge Pond is included as Appendix Y.

- 3. The following information on plans and specifications is required for Type I, II, and III landfills:**

The above citation is not applicable. The WWTU are Type I surface impoundments.

4. The following information on plans and specifications for the prevention of groundwater contamination must be submitted for Type I and II facilities:

- a. representative cross-sections and geologic cross-sections showing original and final grades, approximate dimensions of daily fill and cover, drainage, the water table, groundwater conditions, the location and type of liner, and other pertinent information;

As indicated on the General Plant Overall Plot Plan (Figure 7), there are five solid waste surface impoundments located at the Louisiana Plant. The five impoundments are designed to operate in conjunction during normal operations or separately to provide for individual maintenance. The plans and sections of the impoundment liners and associated equipment are included in Figures 21, 22 and 23. These plans show the original and final grades and special drainage features. A description of the groundwater conditions pertinent to the Plant site as well as the individual facilities is discussed in response to LAC 33:VII.709.E.

Information concerning the East Surge Pond is included as Appendix Y.

The impoundments function as treatment areas; therefore, the requirement for daily fill and cover does not apply.

Drainage is routed through the impoundments and travels from the API Separators to Aeration Basins No. 1 and No. 2, to the Clarifiers, and then to the Recycle Pond. Flow enters the South Surge Pond and the East Surge Pond only during periods of high rainfall. The treated water ultimately drains westerly through LPDES Outfall 001.

Two wastewater treatment surface impoundments (the Recycle Pond and the South Surge Pond) are lined with a large deposit of natural clay (Max. Coefficient of Permeability $1, 10^7$ cm/sec) approximately 10 feet thick beneath the units. The East Surge Pond, which serves as an overflow location for the South Surge Pond in the event of heavy rainfall or flooding, is lined with a three-foot thick, recompacted clay liner and a 60-mil HDPE flexible membrane. The other two units, Aeration Basins No. 1 and No. 2, are fitted with synthetic liners placed over 12 inches of sand (Typ.). Within the sand is a 3-inch perforated pipe. The natural clay unit is directly below the sand and piping. The clay

unit will prevent leachate from entering the underlying soil and filtering into the water table located approximately 12 feet bgs. A levee constructed of a compacted fill contains the wastewater, while a 1 - 3-foot freeboard prevents overflowing, even during adverse weather conditions.

Information concerning the East Surge Pond is included as Appendix Y.

- b. a description of the liner system, which shall include: calculations of anticipated leachate volumes, rationale for particular designs of such systems, and drawings; and**

Please refer to the response given for LAC 33:VII.521.F.4.a.

- c. a description of the leachate collection and removal system, which shall include calculations of anticipated leachate volumes, rationale for particular designs of such systems, and drawings.**

Please refer to the response given for LAC 33:VII.521.B.2.b.

- 5. The following information on plans and specifications for groundwater monitoring must be provided for Type I and II facilities:**

- a. a minimum of three piezometers or monitoring wells in the same zone must be provided in order to determine groundwater flow direction;**

To ensure the containment of solid waste within the WWTU, 24 groundwater monitoring wells were installed adjacent to the existing facilities (see Figure 15). Twenty wells are for detection monitoring purposes (SW-1 to SW-20), while four wells are stand-by wells (MW-1 to MW-4). The placement and construction of these wells was designed to detect any contamination from the facility at the earliest possible occurrence. Therefore, the wells were placed as close to the impoundments as possible and screened in the stratum most likely to be affected by contaminant migration. Monitoring Wells SW-1 to SW-6 and MW-1 to MW-4 were installed in July and August 1983 by D'Appolonia Consulting Engineers, Inc. Monitoring Wells SW-7 to SW-10 were installed in June 1987 by C-K Associates, Inc. Monitoring wells SW-11 to SW-16 were installed in June 1990 by Woodward-Clyde Consultants. Monitoring wells SW-17 to SW-20 were installed in November 1990 by Soil Testing

Engineers, Inc. Monitoring well characteristics are included in the Sampling and Analysis Plan (SAP) (Appendix M) on Table 1. Logs of the wells/soil borings are included in Appendix I.

Information concerning the wells for the East Surge Pond is included as Appendix Y.

- b. **for groundwater monitoring wells, cross-sections illustrating construction of wells, a scaled map indicating well locations and the relevant point of compliance, and pertinent data on each well, presented in tabular form, including drilled depth, the depth to which the well is cased, screen interval, slot size, elevations of the top and bottom of the screen, casing size, type of grout, ground surface elevation, etc.;**

Cross sections illustrating monitoring well construction details are included as the Monitoring Well Cross Sections (Appendix J); and Table 1 in the SAP (Appendix M) provides pertinent data on each well presented in tabular form, including drilled depth, the depth to which the well is cased, screen interval, slot size, elevations of the top and bottom of the screen, casing size, type of grout, ground surface elevation, etc.

As discussed in the responses to sections 521.E.1.a.iii. and 521.E.1.a.iv. and shown on Figure 20, groundwater flow is generally southeast and radial into the open, earthen impoundments.

The relevant points of compliance are monitor wells SW-3, SW-4, SW-9, MW-21, and MW-22. Figure 24 is a scaled map that depicts these points of compliance.

Information concerning the East Surge Pond is included as Appendix Y.

- c. **a groundwater monitoring program including a sampling and analysis plan that includes consistent sampling and analysis procedures that ensure that monitoring results provide reliable indications of groundwater quality;**

Motiva's sitewide SAP (Appendix M) includes consistent sampling and analysis procedures that ensure that monitoring results provide reliable indications of groundwater quality.

The SAP addresses the above comments and also includes the parameters required by LAC 33:VII.709.E.3.g.iii. This SAP will be incorporated into the final Permit Renewal Application.

The WWTU biosludge analyses included in Appendix G of the Permit Renewal Application is provided to justify that proposed monitoring parameters are the most appropriate parameters.

Analysis of the WWTU sludges showed detectable levels of total petroleum hydrocarbons (TPH) in some of the sludges. The enclosed SAP proposes analysis of WWTU monitoring well groundwater samples for xylene and toluene which were detected in some sludge samples. These parameters will act as indicators of the presence of hydrocarbons in lieu of TPH analysis. Motiva maintains background data on xylenes and toluene for the WWTU monitoring wells that may be used for statistical analysis. Motiva does not currently have background data on TPH for the WWTU monitoring wells. Results from these analyses will be submitted to the administrative authority with the required groundwater monitoring reports.

An April 2005 investigation of sediments from the Storm Water Pond included analytical testing and comparison of the test results to the LDEQ regulations for established risk evaluation protocols. This evaluation concluded that the sediment does not contain contaminants at concentrations in excess of the maximum values allowed.

- d. **for an existing facility, all data on samples taken from monitoring wells in place at the time of the permit application must be included. (If this data exists in the Solid Waste Division records, the administrative authority may allow references to the data in the permit application.) For an existing facility with no wells, groundwater data shall be submitted within 90 days after the installation of monitoring wells. For a new facility, groundwater data (one sampling event) shall be submitted before waste is accepted;**

Motiva has an existing monitoring program in place. Two new groundwater monitoring parameters, xylene and toluene, are being proposed; however, background data exists for these parameters in the WWTU monitoring wells. In the event that the groundwater monitoring parameters listed in the approved Permit Renewal Application should deviate from parameters for which background data has been established, or if new monitoring wells are installed, or if otherwise necessary, Motiva will complete an initial sampling event. The initial sampling event will be a minimum of four (4) independent samples collected for each parameter. These samples will be collected quarterly over a period of one (1) year in order to reflect seasonal variations in

groundwater quality. The fact is noted that some statistical methods require more than four (4) independent samples for the method to be valid.

Baseline data for Wells SW-1 to SW-6 and MW-1 to MW-4 were collected in March 1986. Baseline data for Wells SW-7 to SW-10 were collected between September 1987 and June 1988 and sent to an independent laboratory for analysis in accordance with the SAP being followed at that time. The results indicate no groundwater contamination resulting from the operation of the WWTU. A written report of the analytical results with an interpretation of the data and the chain-of-custody documentation will be submitted to the LDEQ annually.

The SAP has been included as Appendix M.

Information concerning the East Surge Pond is included as Appendix Y.

- e. **a plan for detecting, reporting, and verifying changes in groundwater; and**

Motiva's SAP, which includes procedures for detecting, reporting, and verifying changes in groundwater, is included as Appendix M.

- f. **the method for plugging and abandonment of groundwater monitoring systems.**

Motiva's SAP, which explains the method for plugging and abandonment of wells in the groundwater monitoring system, is included as Appendix M.

- 6. **The facility plans and specifications for Type I and II landfills and surface impoundments (surface impoundments with on-site closure and a potential to produce gases) must provide a gas collection and treatment or removal system.**

The above citation is not applicable. The wastewater stream disposed in the WWTU does not have the potential to produce methane gas or any other type of gas that might migrate and adversely affect human health or the environment.

- G. **Facility Administrative Procedures. Standards governing facility administrative procedures are contained in LAC 33:VII.711.C (Type I and II landfills), LAC 33:VII.713.C (Type I and II surface impoundments), LAC 33:VH.715.C (Type I and II landfarms), LAC 33:VII.717.F (Type I-A**

and II-A facilities), LAC 33:VII.721.B (Type III construction and demolition debris and woodwaste landfills), LAC 33:VII.723.B (Type III composting facilities), and LAC 33:VII.725.B (Type III separation facilities).

1. The following information on administrative procedures is required for all facilities:

a. recordkeeping system; types of records to be kept; and the use of records by management to control operations;

Motiva maintains all routine management and administrative records for the WWTU as well as documentation required by the appropriate regulatory agencies.

Records maintained pertaining to solid waste include:

- Inspections by Motiva
- Annual Solid Waste Generator Reports
- Copies of all documents received from or submitted to the LDEQ
- Records on Groundwater Sampling Results
- Record of LDEQ Inspections
- Existing Solid Waste Permits
- Current Solid Waste Rules and Regulations
- Solid Waste Permit Applications
- Contingency Plan and Emergency Procedures
- Quality Assurance/Quality Control (QA/QC) Records
- Monitoring, Testing or Analytical Data
- All permit modifications
- Operator Training Programs
- Daily Log
- Certified Field Notes for Construction Activities
- Inspection and Transportation Records

All relevant solid waste records will be available upon request for LDEQ inspection. These records will be maintained for the life of the facility and kept on file for at least three years after closure, as required by LAC 33:VII.713.C.1.b.i.

Motiva will submit annual reports to the administrative authority indicating estimated quantities and types of solid waste (expressed in wet-weight tons per year) received by the WWTU during the reporting period. Since the WWTU are cleaned out on an as-needed basis, the amount disposed on a yearly basis will normally be recorded as zero. In years that solids are removed from the

impoundments, these amounts will be recorded as amount of waste removed from the impoundments. If applicable, the annual report will also indicate the estimated remaining permitted capacity at the facility as of the end of the reporting period (expressed in wet-weight tons). Historically, the remaining capacity has not been applicable since any substantial solids build-up in the WWTU is removed on an as-needed basis to maintain an adequate operational capacity. This practice is planned to continue. All calculations used to determine the amounts of solid waste received for disposal during the annual-reporting period will be submitted to the administrative authority. A form to be used for this purpose will be obtained from the LDEQ.

The reporting period for the disposer annual report will be from July 1 through June 30, and terminating upon closure of the facility in accordance with the permit.

The disposer annual reports will be submitted to the administrative authority by August 1 of each reporting year. Copies of these reports will be maintained on site.

The disposer annual report will be provided for the WWTU on an annual-reporting form separate from other solid waste facilities.

The annual report will use the seven-digit industrial waste number that has been assigned by the administrative authority to the industrial solid waste generator.

Post-closure monitoring reports are not required. Motiva will clean-close the WWTU.

- b. an estimate of the minimum personnel, listed by general job classification, required to operate the facility; and**

The following is a list of minimum personnel required to operate the impoundments:

- Representative - Environment, Health and Safety
- Representative - Product Blending and Movement
- Representative - Maintenance
- Operator

- c. maximum days of operation per week and per facility operating day (maximum hours of operation within a 24-hour period).**

Motiva operates 24 hours per day, seven days per week.

2. **Administrative procedures for Type II facilities shall include the number of facility operators certified by the Louisiana Solid Waste Operator Certification and Training Program (R.S. 37:3151 et seq.).**

The above citation is not applicable. The WWTU are Type I facilities.

- H. **Facility Operational Plans. Standards governing facility operational plans are contained in LAC 33:VII.711.D (Type I and II landfills), LAC 33:VII.713.D (Type I and II surface impoundments), LAC 33:VII.715.D (Type I and II landfarms), LAC 33:VII.717.G (Type I-A and II-A facilities), LAC 33:VII.721.C (Type III construction and demolition debris and woodwaste landfills), LAC 33:VII.723.C (Type III composting facilities), and LAC 33:VII.725.C (Type III separation facilities).**

1. **The following information on operational plans is required for all facilities:**

- a. **types of waste (including chemical, physical, and biological characteristics of industrial wastes generated on-site), maximum quantities of wastes per year, and sources of waste to be processed or disposed of at the facility;**

Waste sources include contaminated storm water, ballast water, water in crude oil, stripped sour water from the stripper units, Biosludge Landfarm, supernatant from the API Separator Tanks 18T-8 and 37T-311, and Aeration Basin leachate, cooling tower and boiler blowdown, other process-generated wastewaters, and similar wastewaters generated by off-site Alliance facilities. An estimate of the sources and flows of wastewaters is shown on the Wastewater Flow Diagram, included as Figure 11. Additional wastes disposed in the WWTU are monitored by approval. Approvals are processed via electronic media (see Appendix N for example).

For additional information which describes the WWTU employed at Motiva, please refer to the response given for LAC 33:VII.521.B.1.a.

The WWTU do not receive domestic sewage or sewage sludge from publicly-owned treatment works, industrial waste (Type I) or nonhazardous petroleum-contaminated media and debris generated from underground storage tanks (UST) corrective action, or incinerator ash.

The following describes the types of waste to be disposed in the WWTU. September 16, 1998 analyses of the wastes disposed in the WWTU are included in Appendix G.

South Surge Pond

The type of waste to be disposed in the South Surge Pond consists of solids settled from wastewaters. The South Surge Pond may receive wet weather flow from the waste water treatment system. According to hazardous waste regulation, solids generated from wet weather flow is exempt from the definition of primary sludge, a listed hazardous waste. Any solids that settle would form a sludge that may have some oil, organic material, metals, and other inert solids such as sand. Other wastewaters received by the South Surge Pond would generate a similar sludge. In addition, some biomass may be settled in the South Surge Pond from streams generated downstream of the activated sludge system.

East Surge Pond

The type of waste to be disposed in the East Surge Pond is identical to that disposed in the South Surge Pond. The East Surge Pond functions only as an overflow for the South Surge Pond.

Aeration Basin 1 and Aeration Basin 2

The type of waste to be disposed in the aeration basins is a sludge generated during aggressive biological treatment. Biosludge is typically brown in color, consists of mostly water (normally 95-99%), and may have little odor to an odor of organic material. The biosludge solids (1-5%) consist primarily of biomass and may also include some heavy metals. In addition to biomass, the solids may also consist of clay, silt, sand, or other materials that settle out of the wastewaters.

Recycle Pond

The type of waste to be disposed in the Recycle Pond is sludge generated from the settling of solids from wastewaters prior to discharge through a permitted LPDES outfall. The solids may consist of some organic matter, metals, biomass, and other inert solids.

Additional wastes treated in the WWTU are monitored by approval. The only disposal in the WWTU is the incidental settling of solids from wastewaters received by the WWTU. The approval system is designed to ensure that no hazardous wastes are discharged to the WWTU.

In accordance with LAC 33:VII.517, the Department of Environmental Quality shall be notified in advance of any change in the facility or deviation from the permit.

Refer to the response to deficiency 521.B.1.f., for a discussion on quantities of waste within the impoundments.

- b. waste-handling procedures from entry to final disposition, which could include shipment of recovered materials to a user;**

Process water, potentially contaminated storm water or oily water enters the API #1 splitter box from the west processing units. During periods of high flow, some of this water may overflow through a series of junction boxes to the API Separator No. 2 diversion box. The waste water from the splitter box is joined by oily water from all tank farms (except the East Tank Farm) before entering API Separator No. 1 for solids and free oil removal. Sludge removed from the API Separator is pumped to a Sludge Thickener Tank, and recovered oil is pumped to an Emulsion Breaker Tank and the BS&W Tank. Oil recovered from these tanks is pumped to the refinery slop oil system for recycling to the crude process units. Sludge from the Sludge Thickener is removed by a vacuum truck and disposed of in accordance with State and Federal regulations. API Separator No. 1 effluent is pumped to either the system Equalization Tank and from there to the Biological Treatment system, or into Surge or Off-Spec Tankage.

The combined stream from the east process units is joined in the API #2 Primary Diversion Box by runoff from the landfarm area, flow diverted through the above mentioned series of junction boxes, flow from the main flare areas, and from the Sulfur Units.

Drawoff from the API #2 Skimmed Oil Tank, the API #2 Oil Sludge Thickener Tank, and runoff from the Methanol Unloading Area is also routed to the API #2 Primary Diversion Box. Water then normally flows through a bar screen to the 2,500 gpm capacity API Separator No. 2 for oil and sludge removal. Excess flow is diverted to the Storm Sump at the API #2 Primary

Diversion Box. Maximum flow to this Diversion Box was calculated to be about 61,000 gpm based on a 3.5-inch-per-hour rainfall. The water diverted through the Storm Sump may either be pumped into the Waste Water Treatment System Tankage or overflow by gravity into the South Surge Pond. If the material is diverted into the surge pond, it may either be pumped back into the API #2 Primary Diversion Box, or into the Waste Water Treatment System Tankage.

The flow will be diverted to the South Surge Pond when the Waste Water Treatment Tankage is nearing capacity, or in the event of a flow rate too high for the pumping system to manage. This would happen normally only in the case of very heavy rainfall, or repeated rainfall over a period of time. In the event the South Surge Pond capacity is not sufficient, overflow will occur into the East Surge Pond.

The API #2 Skimmed Oil Sump from which the Skimmed Oil Pumps take suction is fed with oily water skimmed from either API Separator No. 2, the Waste Water Treatment System Tankage, or the Bundle Cleaning Slabs. Water removed in the API #2 Sludge Tank is returned to the API #2 Diversion Box. The material in the Skimmed Oil Sump is pumped to a Skimmed Oil Tank where the oil and water layers are allowed to separate. The water drawn off the bottom of the Skimmed Oil Tanks is returned to the Primary Diversion Box by gravity flow, while the oil is pumped to the Slop Oil System Tankage for reprocessing in the site crude units.

From the API Separators or the Storm Sump, process waste water may be directed into the Equalization Tank, the Storm Water Surge Tankage, or the Off-Spec Tank. The process waste water flowing through the Equalization Tank is directed to the first biological treatment unit, the SASTUs. These are aboveground biological treatment units that serve primarily to digest benzene in the forward flow. The discharge of the SASTUs is directed into the two in-ground Aeration Basins. These units serve as the primary biological treatment for the waste water.

From the Aeration Basins, the process waste water is directed split between three in-ground Clarifiers. The Activated Sludge Clarifiers are 100 feet in diameter each and 10 feet deep with straight sides. Normal operating mode of the Clarifier is 50% sludge recirculation. The sludge will flow from the bottom of the Clarifier to the Sludge Recycle Sump. The sludge then will be

pumped to the inlet pipe to the SASTU units. A slip stream of the sludge will be wasted to the Aerobic Digester either at a continuous rate or intermittently. Flow indicators are provided to measure the flow of the sludge recycle rate and the wasted sludge rate.

Scum can be removed from the water surface in the Clarifiers to the Scum Sump and then pumped to the Aerobic Digesters. The Scum Pump is controlled by the level in the Sump and operates intermittently. The clear water will overflow from the Activated Sludge Clarifiers to the Clarifier Clear Well. From the Clear Well, the effluent will flow via gravity to the Recycle Pond.

Both of the Aerobic Digesters are A36 Carbon Steel tanks with 12,000 BBL capacities. The sludge contained in the Digesters is pumped to the Biosludge Landfarm and distributed over the treatment area by means of sprinklers.

Solids overflowing the Activated Sludge Clarifiers are settled out in the Recycle Pond. Effluent from this pond can be pumped through a filtration package to the main Plant outfall at the Mississippi River. An overall view of the Wastewater Treatment Plant is shown in Figure 8 and process flow diagrams for the Wastewater Treatment Plant are included as Figure 11.

The receipt of hazardous waste is strictly prohibited and prevented.

The WWTU does not use open burning as a method of disposal.

c. minimum equipment to be furnished at the facility;

A comprehensive list and location of the equipment associated with the operation of the WWTU is shown on the General Waste Water Treating diagram included as Figure 8 and the Process Flow Diagram Hydraulic Profile General Wastewater Treating drawing included as Figure 12.

d. plan to segregate wastes, if applicable;

This section is not applicable. Motiva's WWTU are designed to only accept the wastestreams which are generated at Motiva and Alliance facilities.

e. procedures planned in case of breakdowns, inclement weather, and other abnormal conditions (including detailed plans for wet-weather access and operations);

All equipment involved in operations at Motiva's WWTU are inspected on a regular basis and maintained to prevent breakdowns and verify the containment of waste. In the event of equipment failure, it is either repaired or standby machinery is leased until repairs are completed.

The integrity of the surrounding impoundment dikes is routinely examined according to the inspection schedule. Any surface impoundment can be removed from service when the level of liquids suddenly drops and the drop is not caused by changes in flow into or out of the impoundment or when the dike leaks.

Severe weather conditions, such as hurricanes and other violent storms, may require the temporary closure of Motiva's WWTU. Decisions to close the impoundments during inclement weather will be made by the Environment, Health and Safety Supervisor.

The East Surge Pond is being added into solid waste service in order to ensure sufficient holding capacity during times of inclement weather.

- f. **procedures, equipment, and contingency plans for protecting employees and the general public from accidents, fires, explosions, etc., and provisions for emergency care should an accident occur (including proximity to a hospital, fire and emergency services, and training programs); and**

Comprehensive safety rules and instructions are in place and are complemented by extensive personnel training requirements.

In addition to an aggressive safety program, plans and procedures have been prepared and are in place that outline the procedures to be followed in the event of emergency situation. These include:

- Louisiana Plant Emergency Plans Manual
- Louisiana Plant Fire Manual
- Louisiana Plant Oil and Hazardous Waste Spill Response Plan
- Louisiana Plant Hazardous Waste Contingency Plan and Emergency Procedures

The nature and location of the WWTU preclude the necessity for specialized plans, as the existing plans are adequate to control any emergency as may be expected to normally occur at the facility. These plans and procedures are on file with LDEQ and are also available for review at the Plant.

Provisions have been included in the Plant Emergency Plans to notify local authorities in the event an incident occurs that might impact the surrounding community. The equipment and personnel available at the Louisiana Plant are more than adequate to respond to any emergency condition that might arise. For extremely large or unusual incidents, the Refinery has identified local fire and police departments, hospitals, and emergency response teams which operate in the area of the facility or are subject to be called by the Emergency Coordinator or his designated representative. The Volunteer Fire Department of Union-Convent, the sheriffs departments of Ascension and St. James Parishes, the Prevost Memorial Hospital of Donaldsonville, Louisiana, the East Ascension Hospital and Riverview Medical Center of Gonzales, Louisiana, are available if the need should arise.

The Administrative Authority will be notified in accordance with LAC 33:I.Subpart 2 if a leak in one of the WWTU is found.

Employees who are responsible for the operations of the Motiva WWTU are required to undergo a rigorous safety training program, and to perform their specific operational duties accordingly.

All operational personnel at the Motiva WWTU are required to wear protective equipment such as hard hats, safety glasses, gloves, and other equipment as necessary for protection against accidental injury. Should an accident causing injury occur, immediate medical care will be provided by the onsite medical facility or at one of the two area hospitals.

As stated in the Contingency Plan, included as Appendix O of the Permit Renewal Application, the plan will be filed with the local fire department and the closest hospital or clinic upon approval of the Permit Renewal Application. The plan will be updated annually or when implementation demonstrates that a revision is needed.

Appendix P of the Permit Renewal Application is a Personnel Training Plan for the WWTU. This plan outlines training sessions concerning emergency procedures for all employees working at the facility. As stated in the plan, facility personnel will participate in an annual review of the training program.

Appendix X contains correspondence from Industrial Emergency Services and St. Elizabeth Hospital that address the requirements of LA R.S. 30:2157.

g. provisions for controlling vectors, dust, litter, and odors.

Reduction in vector attractiveness is achieved if the volatile solid content of the sludge is reduced by at least 38% during treatment.

The wastewater stream and the type of sludge developed in the surface impoundments do not attract pathogen transmitting organisms; therefore, excessive vector control is not required. The physical nature of the solid waste generated and disposed in the WWTU is such that the waste will not become airborne as dust nor is it trash requiring litter control. Daily inspections are performed at the WWTU for structural stability and excessive odors. Based on Motiva's experience, there are no odors associated with the WWTU. However, if odors do exist, the safest and most effective method to eliminate the odors will be implemented.

2. The following information on operational plans is required for Type I and II facilities:

- a. a comprehensive operational plan describing the total operation, including (but not limited to) inspection of incoming waste to ensure that only permitted wastes are accepted (Type II landfills must provide a plan for random inspection of incoming waste loads to ensure that hazardous wastes or regulated PCB wastes are not disposed of in the facility.); traffic control; support facilities; equipment operation; personnel involvement; and day-to-day activities. A quality-assurance/quality-control [QA/QC] plan shall be provided for facilities receiving industrial waste; domestic-sewage sludge; incinerator ash; friable asbestos; nonhazardous petroleum-contaminated media; and debris generated from underground storage tanks [UST], corrective action, or other special wastes as determined by the administrative authority. The QA/QC plan shall include (but shall not be limited to) the necessary methodologies; analytical personnel; preacceptance and delivery restrictions; and appropriate responsibilities of the generator, transporter, processor, and disposer. The QA/QC plan shall ensure that only permitted, nonhazardous wastes are accepted;**

Please refer to the WWTU Facility Operational Plan (Appendix Q) and Groundwater Sampling and Analysis Plan (Appendix M).

The WWTU is located entirely within the refinery boundaries with traffic being controlled at the plant entrances.

The WWTU does not require support facilities to operate.

As stated in the Permit Renewal Application in the response to 521.G.1.b, following is a list of personnel who are involved in the operation and/or maintenance of the WWTU:

- Representative – Safety, Health, and Environmental (SH&E)
- Representative – Product, Blending, and Movement (PB&M)
- Representative – Maintenance
- Operator

Motiva performs daily inspections of the WWTU as part of its Facility Operation Plan. These inspections center upon the visual inspection of the impoundments for evidence of leaks, strong odors, or structural failures (i.e. impoundment slope failures, erosion, etc.) and to verify that a minimum of two feet of freeboard is maintained. Excessive vegetative growth that prevents proper access, inspection, or operation, or may provide a conduit for groundwater contamination is also removed. Any findings will be noted on the daily inspection form and appropriate corrective actions will be taken. Due to site surface grading, storm water run on will not occur.

An estimate of the sources and flows of wastewater (normal annualized averages) are shown on the Simplified Block Flow Diagram Plant Water Balance (Figure 25) and the Wastewater Flow Diagram (Figure 11). Flows of the contaminated water system are based on a rainfall input of 3.5 inches per hour. Upon conversion of the existing Clean Storm Water Pond to the East Surge Pond, detention facilities for the oily water system will be adequate to hold a 25-year, 24-hour rainfall event.

The design capacity of the facility is relative to the impoundment's capability to effectively treat the wastewater stream. LPDES permitting monitors the wastewater discharge from the impoundments. The LPDES monitoring allows Motiva to keep track of the removal efficiency of the impoundments. Should discharge water quality significantly deteriorate or other indicators of significant sludge volume accumulation be present, the impoundment sludge volume will be evaluated visually, by

surveying, or other appropriate means, to ensure adequate capacity. If it is determined that there is inadequate capacity, appropriate corrective action will be taken.

A copy of the daily inspection checklist is included as Appendix R.

b. salvaging procedures and control, if applicable; and

The above citation is not applicable. The waste disposed in Motiva's WWTU is non-salvageable.

c. scavenging control.

The above citation is not applicable. The waste disposed in Motiva's WWTU is non-scavengeable.

3. The following information on operational plans is required for Type I and II landfarms:

The above citation is not applicable. Motiva's WWTU are Type I surface impoundments.

4. The following information on operational plans is required for Type I-A and II-A incinerator waste-handling facilities and refuse-derived energy facilities:

The above citation is not applicable. Motiva's WWTU are Type I surface impoundments.

5. The following information on operational plans is required for Type I-A and II-A refuse-derived fuel facilities and Type III separation and composting facilities:

The above citation is not applicable. Motiva's WWTU are Type I surface impoundments.

6. The operational plans for Type I-A and II-A refuse-derived fuel facilities and Type III separation and composting facilities must include a description of marketing procedures and control.

The above citation is not applicable. Motiva's WWTU are Type I surface impoundments.

7. The operational plans for Type I and II facilities receiving waste with a potential to produce gases must include a comprehensive air monitoring plan.

The above citation is not applicable. The wastewater stream contained in the WWTU does not have the potential to produce methane gas or any other type of gas that might migrate and adversely affect human health or the environment.

I. Implementation Plan. Standards governing implementation plans are contained in LAC 33:VII.709.D (Type I and II facilities), LAC 33:VII.717.H (Type I-A and II-A facilities), and LAC 33:VII.719.E (Type III facilities).

1. The implementation plans for all facilities must include the following:

- a. a construction schedule for existing facilities which shall include beginning and ending time-frames and time-frames for the installation of all major features such as monitoring wells and liners. (Time-frames must be specified in days, with day one being the date of standard permit issuance); and**

The Aeration Basins No. 1 and No. 2, the South Surge Pond, and the Recycling Pond are all existing facilities. The current plan is to begin retrofitting the new East Surge Pond in the second quarter of 2006 and complete construction by the end of the fourth quarter of 2006.

- b. details on phased implementation if any proposed facility is to be constructed in phases.**

The above citation is not applicable. There is no phased implementation planned for the solid waste facilities addressed in this permit application. All units are existing units. The Storm Water Pond will be converted to the East Surge Pond in accordance with the construction schedule described in the response to LAC 33:VII.1.1.a.

2. The implementation plans for Type I and II facilities must include a plan for closing and upgrading existing operating areas if the application is for expansion of a facility or construction of a replacement facility.

The only planned upgrade for the solid waste facilities is to convert the Storm Water Pond to the East Surge Pond.

J. Facility Closure. Standards governing facility closure are contained in LAC 33:VII.711.E (Type I and II landfills), LAC 33:VII.713.E (Type I and II surface impoundments), LAC 33:VII.715.E (Type I and II landfarms), LAC 33:VII.717.I (Type I-A and II-A facilities), LAC 33:VII.721.D (construction

and demolition debris and wood waste landfills), LAC 33:VII.723.D (Type III composting facilities), and LAC 33:VII.725.D (Type III separation facilities)

1. The closure plan for all facilities must include the following:

a. the date of final closure;

The estimated closure date for the WWTU is 2035.

b. the method to be used and steps necessary for closing the facility; and

Motiva will submit formal written notification to the LDEQ at least 90 days prior to the initiation of closure activities. This notification will include a closure plan that includes the following:

- An analysis of the sludge to identify the wastes that have entered the WWTU;
- The selection and justification of indicator parameters to be sampled which are intrinsic to the wastes that have entered the WWTU (Motiva anticipates that Total Petroleum Hydrocarbons, using EPA Test Method 8015, will be an acceptable indicator parameter to determine the amount of organic content in the underlying soil);
- a plan for sampling and analysis of uncontaminated soils in the general area of the WWTU for a determination of background levels using the indicator parameters selected;
- a diagram showing the location of the area proposed for background sampling, along with a description of the sampling and testing methods;
- changes, if any, in the closure schedule and cost estimate.

The method to be used and steps necessary for closing the WWTU is as follows:

- 1) Receive approval from the Administrative Authority to initiate closure activities in accordance with the approved Closure Plan.
- 2) Pump residual wastewater from Aeration Basin No. 1 and No. 2, the Recycle Pond, the South Surge Pond, and the East Surge Pond as effluent through the permitted LPDES outfall.

- 3) Remove the excess sludge and 6 inches of underlying soil from the WWTU and dispose in an off-site, permitted disposal facility.
- 4) Conduct background and confirmatory sampling events to ensure all solid waste has been removed.
- 5) Submit analytical results to the Administrative Authority, along with a discussion of a comparison of the results. Documentation regarding the sampling and testing methods will also be submitted to the Administrative Authority.
- 6) After confirmation by the Administrative Authority that background levels have been achieved, request a closure inspection by the Administrative Authority.
- 7) Dismantle and salvage equipment associated with the WWTU.
- 8) Restore the facility area to its original grade using suitable earthen material, if necessary. Add topsoil and seed with a suitable grass species to control erosion.
- 9) Plug and abandon the groundwater monitoring system according to the Plugging and Abandonment Plan described in the Groundwater Sampling and Analysis Plan (Appendix M).

The sequence of these events may be revised as appropriate.

A Quality Assurance/Quality Control Procedure has been established to minimize potential sources of sample contamination and includes the following key elements:

- The sampling equipment will be thoroughly cleaned before sampling and between sampling locations with biodegradable soap, water, and a stiff bottle brush, as needed, followed by rinsing with distilled water.
- Field sampling personnel will wear plastic disposable gloves at all times during sampling and will change gloves between each sample to minimize the potential for cross-contamination.
- Field sampling personnel will complete a Daily Field Log on each of the sampling operations for documentation purposes of events which may affect the quality of the analytical results. Items to be included on the daily log include description of daily activities, weather conditions,

changes in sampling procedure, and other pertinent information. An example of the Daily Field Log is included as Appendix S.

- Soil samples will be placed in pre-cleaned glass jars.
- Sample containers will be labeled with a unique sample identification number, date, sampler's initials, and parameters for analyses.
- The integrity of the samples will be ensured by documenting on the Chain-of-Custody all soil samples collected at the WWTU. A general practice of minimal transfers of sample bottles and recordkeeping will provide adequate Chain-of-Custody control. Standard Chain-of-Custody forms (Appendix T) will accompany all samples to a certified analytical laboratory.
- Sample holding times will be minimized and shall not exceed those listed in EPA Test Methods for Evaluating Solid Waste, Third Edition (SW-846).
- Analytical procedures will be in accordance with SW-846.

The field sampling personnel are responsible for the custody and care of collected samples until the containers have been transferred to the laboratory. The field sampler and laboratory custodian sign the Chain-of-Custody form. The field sampler retains a copy of the form and the laboratory keeps the original form.

Prior to and during closure, sufficient freeboard will be maintained in the WWTU to prevent overflow of the facility to adjoining areas. The existing surface grading and dike system will be maintained to prevent overflow. Also, pumps or other equipment may be used to prevent overflow.

Due to the site surface grading, storm water runoff will not occur. The flow control structures within the impoundments will be maintained until completion of closure, to prevent overflowing of the impoundment to adjoining areas.

Following the removal of waste and contaminated soil, the "clean soil" will be sampled for confirmation of "cleanliness." The LDEQ will be notified at least one week prior to the anticipated date of sampling. A minimum of five samples will be collected from each impoundment. Of the five collected samples, one sample will be collected from the midpoint of each sidewall and one will be collected from approximately the center of the base of

each unit. Samples will be collected in accordance with SW-846 sampling protocols. Each sample will be analyzed for Total Petroleum Hydrocarbons according to Method 8015, modified, or by the generally accepted method at the time of closure.

In addition to sampling the sidewalls and base of the units, a background surface sample from up to three locations upgradient of the WWTU will be collected. The sample will be collected in accordance with SW-846 sampling protocol and analyzed for Total Petroleum Hydrocarbons according to Method 8015, modified, or by the generally accepted method at the time of closure. If the five samples from each unit is equal or less than the background level, then the unit will be considered clean. Motiva acknowledges that all sample concentrations shall be equal or less than the background samples; otherwise, additional work will be required. In lieu of collecting the background samples as described above, Motiva may use other background data agreed upon by the LDEQ and Motiva as representative of background conditions. The results of the confirmation sampling will be sent to LDEQ for verification that clean closure has been achieved.

Motiva reserves the right to gain closure of all or any portion of the WWTU in accordance with the LDEQ Risk Evaluation/Corrective Action Program (RECAP), in lieu of the above discussed "clean closure" criteria.

- c. **the estimated cost of closure of the facility, based on the cost of hiring a third party to close the facility at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive.**

The estimated cost of closure of the WWTU, based on the cost of hiring a third party to close the facilities at the point in the facilities' operating life when the extent and manner of its operation would make closure the most expensive, is included as Appendix U.

2. The closure plan for Type I and II landfills and surface impoundments must include:

- a. **a description of the final cover and the methods and procedures used to install the cover;**

The above citation is not applicable. A final cover is not required because the impoundments will be clean closed.

- b. **an estimate of the largest area of the facility ever requiring a final cover at any time during the active life;**

The above citation is not applicable. A final cover is not required because the impoundments will be clean closed.

- c. **an estimate of the maximum inventory of solid waste ever on-site over the active life of the facility; and**

An estimate of the maximum inventory of solid waste ever on-site over the active life of the facility is 161,850 yds³.

- d. **a schedule for completing all activities necessary for closure.**

A schedule for completing all activities necessary for closure of the WWTU will be included in the formal written notification of Motiva's intent to close the facility or part of the facility to the Administrative Authority at least 90 days prior to the initiation of closure activities.

- 3. **The closure plan for all Type I and II facilities and Type III woodwaste and construction/demolition debris facilities shall include the following:**

- a. **the sequence of final closure of each unit of the facility, as applicable;**

Please refer to the response given for LAC 33:VII.521.J.1.b.

- b. **a drawing showing final contours of the facility; and**

The above citation is not applicable. The area of the WWTU will be restored to its original condition.

- c. **a copy of the document that will be filed upon closure of the facility with the official parish record keeper indicating the location and use of the property for solid waste disposal, unless the closure plan specifies a clean closure.**

This section is not applicable. All solid waste will be removed from the WWTU at closure.

- K. **Facility Post-closure. Standards governing post-closure requirements are contained in LAC 33:VII.711.F (Type I and II landfills), LAC 33:VII.713.F (Type I and II surface impoundments), LAC 33:VII.715.F (Type I and II landfarms), and LAC 33:VII.721.E (Type III construction and demolition debris and woodwaste landfills).**

This section is not applicable. Motiva will clean-close the WWTU.

L. Financial Responsibility. Standards governing financial responsibility are contained in LAC 33:VII.727. A section documenting financial responsibility according to LAC 33:VII.727 which contains the following information, must be included for all facilities:

1. **the name and address of the person who currently owns the land and the name and address of the person who will own the land if the standard permit is granted (if different from the permit holder, provide a copy of the lease or document which evidences the permit holder's authority to occupy the property); or**

Motiva is a joint-venture partnership, owned by Shell (51%) and Saudi Ramco (49%). Due to the partnership status of the Company, published annual reports are not produced and not available.

Motiva's address is 12700 Northborough, Houston, Texas.

2. **the name of the agency or other public body that is requesting the standard permit; or, if the agency is a public corporation, its published annual report; or, if otherwise, the names of the principal owners, stockholders, general partners, or officers;**

Please refer to the response given for LAC 33:VII.521.L.1.

3. **evidence of liability coverage, including:**

Appendix V contains evidence of liability coverage, including personal injury, employees, and the public (coverage, carriers, and any exclusions or limitations), property damage (coverage and carrier), and environmental risks.

Please see the responses to LAC 33:VII.727.A.1.a-f that relate to the applicable financial assurance mechanism.

- a. **personal injury, employees, and the public (coverage, carriers, and any exclusions or limitations);**

Please refer to the response given for LAC 33:VII.521.L.3.

- b. **property damage (coverage and carrier);**

Please refer to the response given for LAC 33:VII.521.L.3.

- c. **environmental risks; and**

Please refer to the response given for LAC 33:VII.521.L.3.

LAC 33:VII.727: Financial Assurance

727.A Financial Responsibility during Operation and for Closure and Post-closure Care

1. Financial Responsibility during Operation. Permit holders or applicants for standard permits of Type I, I-A, II, II-A, and III facilities have the following financial responsibilities while the facility is in operation:

- a. Permit holders or applicants for Type I and II facilities shall maintain liability insurance, or its equivalent, for sudden and accidental occurrences in the amount of \$1 million per occurrence, and \$1 million annual aggregate, per site, exclusive of legal-defense costs, for claims arising from injury to persons or property, owing to the operation of the site. Evidence of this coverage shall be updated annually and provided to the Office of Environmental Services, Water and Waste Permits Division.***

Shell Oil Company on behalf of the Motiva Convent facility maintains liability insurance for sudden and accidental occurrences in the amount of \$1 million per occurrence and \$1 million annual aggregate, per site, exclusive of legal-defense costs, for claims arising from injury to persons or property, owing to the operation of the site. Evidence of this coverage is provided in Appendix V.

- b. Permit holders or applicants for Type I-A and II-A facilities shall maintain liability insurance, or its equivalent, for sudden and accidental occurrences in the amount of \$500,000 per occurrence, and \$500,000 annual aggregate, per site, exclusive of legal-defense costs, for claims arising from injury to persons or property, owing to the operation of the site. Evidence of this coverage shall be updated annually and provided to the Office of Environmental Services, Water and Waste Permits Division.***

The above citation is not applicable. The WWTU are Type I surface impoundments.

- c. *Permit holders or applicants for Type III facilities shall maintain liability insurance, or its equivalent, for sudden and accidental occurrences in the amount of \$250,000 per occurrence, and \$250,000 annual aggregate, per site, exclusive of legal-defense costs, for claims arising from injury to persons or property, owing to the operation of the site. Evidence of this coverage shall be updated annually and provided to the Office of Environmental Services, Water and Waste Permits Division.*

The above citation is not applicable. The WWTU are Type I surface impoundments.

- d. *The financial responsibility may be established by any one or a combination of the following:*
 - i. *Evidence of liability insurance may consist of either a signed duplicate original of a solid waste liability endorsement, or a certificate of insurance. All liability endorsements and certificates of insurance must include:*

The above citation is not applicable. Motiva is providing financial assurance by means of the financial test.

ii. *Letter of Credit.*

The above citation is not applicable. Motiva is providing financial assurance by means of the financial test.

iii. *Financial Test*

- (a). *To meet this test, the applicant, permit holder, parent corporation of the applicant (corporate guarantor), or permit holder must submit to the Office of Environmental Services, Water and Waste Permits Division, the documents required by Paragraph A.2 of this Section demonstrating that the requirements of that Subsection have been met. Use of the financial test may be disallowed on the basis of the accessibility of the assets of the permit holder, applicant, or parent corporation (corporate guarantor). If the applicant, permit holder, or parent corporation is*

using the financial test to demonstrate liability coverage and closure and post-closure care, only one letter from the chief financial officer is required.

The documents required by Subsection A.2 of this Section are provided in Appendix V.

- (b). The assets of the parent corporation of the applicant or permit holder shall not be used to determine whether the applicant or permit holder satisfies the financial test, unless the parent corporation has supplied a corporate guarantee as authorized in Clause A.1.d.iv of this Section.*

The assets of Shell Oil Company have not been used to determine whether the permit holder satisfies the financial test.

- (c). The wording of the financial test shall be as specified in Subclause A.2.i.iv.(e) of this Section.*

The wording of the financial test is as specified in LAC 33:VII.727.A.2.i.iv(e).

iv. Corporate Guarantee

The above citation is not applicable. Motiva is providing financial assurance by means of the financial test.

- e. The use of a particular financial responsibility mechanism is subject to the approval of the administrative authority.*

Motiva acknowledges the above citation.

- f. Permit holders of existing facilities must submit, on or before February 20, 1995, financial responsibility documentation that complies with the requirements of Paragraph A.1 of this Section. Applicants for permits for new facilities must submit evidence of financial assurance in accordance with this Section at least 60 days before the date on which solid waste is first received for processing or disposal.*

Motiva acknowledges the above citation.

4. evidence of a financial assurance mechanism for closure and/or post-closure care.

Evidence of a financial assurance mechanism for closure and/or post-closure care is included in Appendix V.

The wording of the financial test is as specified in LAC 33:VII.727.A.2.i.iv.(e).

The cost estimates will be adjusted within 30 days after each anniversary of the date on which the first cost estimate was prepared on the basis of either the inflation factor derived from the Annual Implicit Price Deflator for Gross Domestic Product, as published by the U.S. Department of Commerce in its Survey of Current Business, or a reestimation of the closure costs in accordance with LAC 33:VII.727.A.2.b.i and ii. Motiva will submit a written notice of any such adjustment to the Administrative Authority within 15 days following such adjustment.

Please see the responses to LAC 33:VII.727.A.2.a-k that relate to the applicable financial assurance mechanism.

LAC 33:VII.727: Financial Assurance

727.A Financial Responsibility during Operation and for Closure and Post-closure Care

2. Financial Responsibility for Closure and Post-Closure Care. Permit holders or applicants of Type I, I-A, II, II-A, and III facilities have the following financial responsibilities for closure and post-closure care:

a. Permit holders or applicants for processing or disposal facilities shall establish and maintain financial assurance for closure and post-closure care.

Motiva will establish and maintain financial assurance for closure by means of the financial test mechanism.

b. The applicant or permit holder shall submit to the Office of Environmental Services, Water and Waste Permits Division, the estimated closure date and the estimated cost of closure and post-closure care in accordance with the following procedures:

i. The applicant or permit holder must have a written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in these

rules. The estimate must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by the closure plan, and shall be based on the cost of hiring a third party to close the facility in accordance with the closure plan.

The estimated cost of closure of the WWTU, based on the cost of hiring a third party to close the facilities at the point in the facility's operating life when the extent and manner of its operation would make the closure the most expensive, is included in Appendix U.

- ii. The applicant or permit holder of a facility subject to post-closure monitoring or maintenance requirements must have a written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the provisions of these rules. The estimate of post-closure cost is calculated by multiplying the annual post-closure cost by the number of years of post-closure care required and shall be based on the cost of hiring a third party to conduct post-closure activities in accordance with the closure plan.*

The estimated annual cost of post-closure monitoring and maintenance of the WWTU, based on the cost of hiring a third party to close the facilities, is included in Appendix U.

- iii. The cost estimates must be adjusted within 30 days after each anniversary of the date on which the first cost estimate was prepared on the basis of either the inflation factor derived from the Annual Implicit Price Deflator for Gross Domestic Product, as published by the U.S. Department of Commerce in its "Survey of Current Business" or a reestimation of the closure and post-closure costs in accordance with Clauses A.2.b.i and ii of this Section. The permit holder or applicant must revise the cost estimate whenever a change in the closure/post-closure plans increases or decreases the cost of the closure plan. The permit holder or applicant must submit a written notice of any such adjustment to the Office of*

Environmental Services, Water and Waste Permits Division, within 15 days following such adjustment.

The cost estimates will be adjusted within 30 days after each anniversary of the date on which the first cost estimate was prepared on the basis of either the inflation factor derived from the Annual Implicit Price Deflator for Gross Domestic Product, as published by the U.S. Department of Commerce in its Survey of Current Business, or a reestimation of the closure costs in accordance with LAC 33:VII.727.A.2.b.i and ii. Motiva will submit a written notice of any such adjustment to the Administrative Authority within 15 days following such adjustment.

- iv. For trust funds, the first payment must be at least equal to the current closure and post-closure cost estimate, divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each annual anniversary of the date of the first payment. The amount of each subsequent payment must be determined by subtracting the current value of the trust fund from the current closure and post-closure cost estimates and dividing the result by the number of years remaining in the pay-in period. The initial pay-in period is based on the estimated life of the facility.*

Motiva acknowledges the above citation.

- c. Financial Assurance Mechanisms. The financial assurance mechanism must be one of a combination of the following: a trust fund, a financial guarantee bond ensuring closure funding, a performance bond, a letter of credit, an insurance policy, or the financial test. The financial assurance mechanism is subject to the approval of the administrative authority and must fulfill the following criteria:*
 - i. Except when a financial test, trust fund, or certificate of insurance is used as the financial assurance mechanism, a standby trust fund naming the administrative authority as beneficiary must be established at the time of the creation of the financial assurance mechanism into which the proceeds of such*

mechanism could be transferred should such funds be necessary for either closure or post-closure of the facility, and a signed copy must be furnished to the administrative authority with the mechanism.

The above citation is not applicable. Motiva is providing financial assurance by means of the financial test.

- ii. A permit holder of applicant may use a financial assurance mechanism specified in this Section for more than one facility, if all such facilities are located within Louisiana and are specifically identified in the mechanism.*

Motiva acknowledges the above citation.

- iii. The amount covered by the financial assurance mechanism(s) must equal the total of the current closure and post-closure estimates for each facility covered.*

Motiva acknowledges the above citation. Evidence of a financial assurance mechanism for closure and post-closure care is included as Appendix V.

- iv. When all closure and post-closure requirements have been satisfactorily completed, the administrative authority shall execute an approval to terminate the financial assurance mechanism(s).*

Motiva acknowledges the above citation.

- d. Trust Funds. A permit holder or applicant may satisfy the requirements of this Section by establishing a closure trust fund that conforms to the following requirements and submitting an originally signed duplicate of the trust agreement to the Office of Environmental Services, Water and Waste Permits Division.*

The above citation is not applicable. Motiva will establish and maintain financial assurance for closure by means of the financial test mechanism.

- e. Surety Bonds. A permit holder or applicant may satisfy the requirements of this Section by obtaining a surety*

bond that conforms to the following requirements and submitting the bond to the Office of Environmental Services, Water and Waste Permits Division.

The above citation is not applicable. Motiva will establish and maintain financial assurance for closure by means of the financial test mechanism.

- f. Performance Bonds. A permit holder or applicant may satisfy the requirements of this Section obtaining a surety bond that conforms to the following requirements and submitting the bond to the Office of Environmental Services, Water and Waste Permits Division.*

The above citation is not applicable. Motiva will establish and maintain financial assurance for closure by means of the financial test mechanism.

- g. Letter of Credit. A permit holder or applicant may satisfy the requirements of this Section by obtaining an irrevocable standby letter of credit that conforms to the following requirements and submitting the letter to the Office of Environmental Services, Water and Waste Permits Division.*

The above citation is not applicable. Motiva will establish and maintain financial assurance for closure by means of the financial test mechanism.

- h. Insurance. A permit holder or applicant may satisfy the requirements of this Section by obtaining insurance that conforms to the requirements of this Subparagraph and submitting a certificate of such insurance to the Office of Environmental Services, Water and Waste Permits Division.*

The above citation is not applicable. Motiva will establish and maintain financial assurance for closure by means of the financial test mechanism.

- i. Financial Test. A permit holder, applicant, or parent corporation of the permit holder or applicant, which will be responsible for the financial obligations, may satisfy the requirements of this Section by demonstrating that he or she passes a financial test as specified in this Subparagraph. The assets of the parent corporation of*

the applicant or permit holder shall not be used to determine whether the applicant or permit holder satisfies the financial test, unless the parent corporation has supplied a corporate guarantee as outlined in Clause A.1.d.iv of this Section.

i. To pass this test, the permit holder, applicant, or parent corporation of the permit holder or applicant, must meet the criteria of either Subclause (a) or (b) below.

(a). The permit holder, applicant, or parent corporation of the permit holder or applicant must have:

(i). tangible net worth of at least six times the sum of the current closure and post-closure estimates to be demonstrated by this test, and the amount of liability coverage to be demonstrated by this test; and

Please refer to Appendix V.

(ii). tangible net worth of at least \$10 million; and

Please refer to Appendix V.

(iii). assets in the United States amounting to either at least 90 percent of his total assets, or at least six times the sum of the current closure and post-closure estimates, to be demonstrated by this test, and the amount of liability coverage to be demonstrated by this test.

Please refer to Appendix V.

(b). The permit holder, applicant, or parent corporation of the permit holder or applicant must have:

(i). a current rating for his most recent bond issuance of AAA, AA, A, or BBB, as issued by Standard and Poor's, or Aaa, Aa, or Baa, as issued by Moody's; and

Please refer to Appendix V.

- (ii). tangible net worth of at least \$10 million;
and*

Please refer to Appendix V.

- (iii). assets in the United States amounting to either at least 90 percent of his total assets, or at least six times the sum of the current closure and post-closure estimates, to be demonstrated by this test, and the amount of liability coverage to be demonstrated by this test.*

Please refer to Appendix V.

- ii. To demonstrate that he or she meets this test, the permit holder, applicant, or parent corporation of the permit holder or applicant, must submit the following three items to the Office of Environmental Services, Water and Waste Permits Division.*

- (a). a letter signed by the chief financial officer of the permit holder, applicant, or parent corporation demonstrating and certifying the criteria in Clause A.2.i.i of this Section and including the information required by Clause A.2.i.iv of this Section. If the financial test is provided to demonstrate both assurance for closure and/or post-closure care and liability coverage, a single letter to cover both forms of financial responsibility is required;*

Please refer to Appendix V.

- (b). a copy of the independent certified public accountant (CPA)'s report on the financial statements of the permit holder, applicant, or parent corporation of the permit holder or applicant for the latest completed fiscal year;*

Please refer to Appendix V.

(c). *a special report from the independent CPA to the permit holder, applicant, or parent corporation of the permit holder or applicant stating that:*

(i). *he or she has computed the data specified by the chief financial officer as having been derived from the independently audited, year-end financial statements with the amounts of the latest fiscal year in such financial statements; and*

Please refer to Appendix V.

(ii). *in connection with that procedure, no matters came to his attention that caused him to believe that the specified data should be adjusted.*

Please refer to Appendix V.

iii. *The administrative authority may disallow use of this test on the basis of the opinion expressed by the independent CPA in his report on qualifications based on the financial statements. An adverse opinion or a disclaimer of opinion will be cause for disallowance. The administrative authority will evaluate other qualifications on an individual basis. The administrative authority may disallow the use of this test on the basis of the accessibility of the assets of the parent corporation (corporate guarantor), permit holder, or applicant. The permit holder, applicant, or parent corporation must provide evidence of insurance for the entire amount of required liability coverage, as specified in this Section, within 30 days after notification of the disallowance.*

Motiva acknowledges the above citation.

iv. *The permit holder, applicant, or parent corporation (if a corporate guarantor) of the permit holder or applicant shall provide to the Office of Environmental Services, Water and Waste Permits Division, a letter from the chief financial officer certifying the following information:*

- (a). *a list of solid waste facilities, whether in Louisiana or not, owned and operated by the permit holder or applicant of the facility, for which financial assurance for liability coverage is demonstrated through the use of financial tests, including the amount of liability coverage;*

Please refer to Appendix V.

- (b). *a list of solid waste facilities, whether in Louisiana or not, owned and operated by the permit holder or applicant, for which financial assurance for the closure or post-closure care is demonstrated through the use of a financial test or self-insurance by the permit holder or applicant, including the cost estimates for the closure and post-closure care of each facility;*

Please refer to Appendix V.

- (c). *a list of solid waste facilities, whether in Louisiana or not, owned and operated by any subsidiaries of the permit corporation for which financial assurance for closure and/or post-closure is demonstrated through the financial test or through use of self-insurance, including the current cost estimate for the closure or post-closure care for each facility and the amount of annual aggregate liability coverage for each facility; and*

Please refer to Appendix V.

- (d). *a list of solid waste facilities, whether in Louisiana or not, for which financial assurance for closure or post-closure care is not demonstrated through the financial test, self-insurance, or other substantially equivalent state mechanisms, including the estimated cost of closure and post-closure of such facilities.*

Please refer to Appendix V.

- (e). *The wording of the letter form the chief financial officer shall be identical to the wording as follows, except that the instructions in brackets*

*are to be replaced with the relevant information
and the brackets deleted.*

**SOLID WASTE FACILITY LETTER FROM THE CHIEF FINANCIAL OFFICER
(Liability Coverage, Closure, and/or Post-Closure)**

Secretary
Louisiana Department of Environmental Quality
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313
Attention: Office of Environmental Services, Water and Waste Permits Division

Dear Sir:

I am the chief financial officer of [name and address of firm, which may be either the permit holder, applicant, or parent corporation of the permit holder or applicant]. This letter is in support of this firm's use of the financial test to demonstrate financial responsibility for [insert "liability coverage," "closure," and/or "post-closure," as applicable] as specified in [insert "LAC 33:VII.727.A.1," "LAC 33:VII.727.A.2," or "LAC 33:VII.727.A.1 and A.2"].

[Fill out the following four Paragraphs regarding facilities and associated liability coverage, and closure and post-closure cost estimates. If your firm does not have facilities that belong in a particular Paragraph, write "None" in the space indicated. For each facility, list the site identification number, site name, facility name, and facility permit number.]

1. The firm identified above is the [insert "permit holder", "applicant for a standard permit," or "parent corporation of the permit holder or applicant for a standard permit"] of the following solid waste facilities, whether in Louisiana or not, for which liability coverage is being demonstrated through the financial test specified in LAC 33:VII.727.A.1. The amount of annual aggregate liability coverage covered by the test is shown for each facility:

2. The firm identified above is the [insert "permit holder", "applicant for a standard permit," or "parent corporation of the permit holder or applicant for a standard permit"] of the following solid waste facilities, whether in Louisiana or not, for which financial assurance for [insert "closure," "post-closure," or "closure and post-closure"] is demonstrated through a financial test similar to that specified in LAC 33:VII.727.A.2 or other forms of self-insurance. The current [insert "closure," "post-closure," or "closure and post-closure"] cost estimates covered by the test are shown for each facility:

3. This firm guarantees through a corporate guarantee similar to that specified in [insert "LAC 33:VII.727.A.2," or "LAC 33:VII.727.A.1 and 2"], [insert "liability coverage," "closure," "post-closure," or "closure and post-closure"] care of the following solid waste facilities, whether in Louisiana or not, of which [insert the name of the permit

holder or applicant] are/is a subsidiary of this firm. The amount of annual aggregate liability coverage covered by the guarantee for each facility and/or the current cost estimates for the closure and/or post-closure care so guaranteed is shown for each facility:

4. This firm is the owner or operator of the following solid waste facilities, whether in Louisiana or not, for which financial assurance for liability coverage, closure and/or post-closure care is not demonstrated either to the U.S. Environmental Protection Agency or to a state through a financial test or any other financial assurance mechanism similar to those specified in LAC 33:VII.727.A.1 and/or 2. The current closure and/or post-closure cost estimates not covered by such financial assurance are shown for each facility.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed year, ended [date].

[Fill in Part A if you are using the financial test to demonstrate coverage only for the liability requirements.]

Part A. Liability Coverage for Accidental Occurrences

[Fill in Alternative I if the criteria of LAC 33:VII.727.A.2.i.i.(a) are used.]

Alternative I		
1. Amount of annual aggregate liability coverage to be demonstrated	\$	
*2. Current assets	\$	
*3. Current liabilities	\$	
*4. Tangible net worth	\$	
*5. If less than 90 percent of assets are located in the U.S., give total U.S. assets	\$	
	YES	NO
6. Is line 4 at least \$10 million?		
7. Is line 4 at least 6 times line 1?		
*8. Are at least 90 percent of assets located in the U.S.?		
9. Is line 4 at least 6 times line 1?		

[Fill in Alternative II if the criteria of LAC 33:VII.727.A.2.i.i.(b) are used.]

Alternative II		
1. Amount of annual aggregate liability coverage to be demonstrated	\$	
2. Current bond rating of most recent issuance of this firm and name of rating service		
3. Date of issuance of bond		
4. Date of maturity of bond		
*5. Tangible net worth	\$	
*6. Total assets in U.S. (required only if less than 90 percent of assets are located in the U.S.)	\$	
	YES	NO
7. Is line 5 at least \$10 million?		
8. Is line 5 at least 6 times line 1?		
*9. Are at least 90 percent of assets located in the U.S.? If not, complete line 10.		
10. Is line 6 at least 6 times line 1?		

[Fill in Part B if you are using the financial test to demonstrate assurance only for closure and/or post-closure care.]

Part B. Closure And/Or Post-Closure

[Fill in Alternative I if the criteria of LAC 33:VII.727.A.2.i.i.(a) are used.]

Alternative I		
1. Sum of current closure and/or post-closure estimate (total all cost estimates shown above)	\$	
*2. Tangible net worth	\$	
*3. Net worth	\$	
*4. Current Assets	\$	
*5. Current liabilities	\$	
*6. The sum of net income plus depreciation, depletion, and amortization	\$	
*7. Total assets in U.S. (required only if less than 90 percent of firm's assets are located in the U.S.)	\$	
	YES	NO
8. Is line 2 at least \$10 million?		
9. Is line 2 at least 6 times line 1?		
*10. Are at least 90 percent of the firm's assets located in the U.S.? If not, complete line 11.		
11. Is line 7 at least 6 times line 1?		

[Fill in Alternative II if the criteria of LAC 33:VII.727.A.2.i.i.(b) are used.]

Alternative II		
1. Sum of current closure and post-closure cost estimates (total of all cost estimates shown above)	\$	
2. Current bond rating of most recent issuance of this firm and name of rating service		
3. Date of issuance of bond		
4. Date of maturity of bond		
*5. Tangible net worth (If any portion of the closure and/or post-closure cost estimate is included in "total liabilities" on your firm's financial statement, you may add the amount of that portion to this line)	\$	
*6. Total assets in U.S. (required only if less than 90 percent of the firm's assets are located in the U.S.)	\$	
	YES	NO
7. Is line 5 at least \$10 million?		
8. Is line 5 at least 6 times line 1?		
*9. Are at least 90 percent of the firm's assets located in the U.S.? If not, complete line 10.		
10. Is line 6 at least 6 times line 1?		

[Fill in Part C if you are using the financial test to demonstrate assurance for liability coverage, closure and/or post-closure care.]

Part C. Liability Coverage, Closure, and/or Post-Closure

[Fill in Alternative I if the criteria of LAC 33:VII.727.A.2.i.i.(a) are used.]

Alternative I		
1. Sum of current closure and/or post-closure cost estimates (total of all cost estimates listed above)	\$ _____	
2. Amount of annual aggregate liability coverage to be demonstrated	\$ _____	
3. Sum of lines 1 and 2	\$ _____	
*4. Total liabilities (If any portion of your closure and/or post-closure cost estimates is included in your "total liabilities" in your firm's financial statements, you may deduct that portion from this line and add that amount to lines 5 and 6.)	\$ _____	
*5. Tangible net worth	\$ _____	
*6. Net worth	\$ _____	
*7. Current assets	\$ _____	
*8. Current liabilities	\$ _____	
*9. The sum of net income plus depreciation, depletion, and amortization	\$ _____	
*10. Total assets in U.S. (required only if less than 90 percent of assets are located in the U.S.)	\$ _____	
	YES	NO
11. Is line 5 at least \$10 million?	_____	_____
12. Is line 5 at least 6 times line 3?	_____	_____
*13. Are at least 90 percent of assets located in the U.S.? If not, complete line 14.	_____	_____
14. Is line 10 at least 6 times line 3?	_____	_____

[Fill in Alternative II if the criteria of LAC 33:VII.727.A.2.i.i.(b) are used.]

Alternative II		
1. Sum of current closure and/or post-closure cost estimates (total of all cost estimates listed above)	\$ _____	
2. Amount of annual aggregate liability coverage to be demonstrated	\$ _____	
3. Sum of lines 1 and 2	\$ _____	
4. Current bond rating of most recent issuance of this firm and name of rating service	_____	
5. Date of issuance of bond	_____	
6. Date of maturity of bond	_____	
*7. Tangible net worth (If any portion of the closure and/or post-closure cost estimates is included in "total liabilities" in your firm's financial statement, you may add that portion to this line)	\$ _____	
*8. Total assets in U.S. (required only if less than 90 percent of assets are located in the U.S.)	\$ _____	
	YES	NO
9. Is line 7 at least \$10 million?	_____	_____
10. Is line 7 at least 6 times line 3?	_____	_____
*11. Are at least 90 percent of assets located in the U.S.? If not, complete line 12.	_____	_____
12. Is line 8 at least 6 times line 3?	_____	_____

(The following is to be completed by all firms providing the financial test)

I hereby certify that the wording of this letter is identical to the wording specified in LAC 33:VII.727.A.2.i.iv.(e).

[Signature of Chief Financial Officer for the Firm]

[Typed Name of Chief Financial Officer]

[Title]

[Date]

Please refer to Appendix V.

- v. *For the purposes of Paragraph A.2 of this Section, the phrase "tangible net worth" shall mean the tangible assets that remain after liabilities have been deducted; such assets would not include intangibles such as good will and rights to patents or royalties.*

Motiva acknowledges the above citation.

- vi. *The phrase "current closure and post-closure cost estimates," as used in Clause A.2.i.i of this Section,*

includes the cost estimates required to be shown in Division A.2.i(a).i of this Section.

Motiva acknowledges the above citation.

- vii. After initial submission of the items specified in Clause A.2.i.ii of this Section, the permit holder, applicant, or parent corporation of the permit holder or applicant must send updated information to the Office of Environmental Services, Water and Waste Permits Division, within 90 days after the close of each succeeding fiscal year. This information must include all three items specified in Clause A.2.i.ii of this Section.*

Motiva acknowledges the above citation.

- viii. The administrative authority may, on the basis of a reasonable belief that the permit holder, applicant, or parent corporation of the permit holder or applicant may no longer meet the requirements of Subparagraph A.2.i of this Section, require reports of financial condition at any time in addition to those specified in Clause A.2.i.ii of this Section. If the administrative authority finds, on the basis of such reports or other information, that the permit holder, applicant, or parent corporation of the permit holder or applicant no longer meets the requirements of Clause A.2.i.ii of this Section, the permit holder or applicant, or parent corporation of the permit holder or applicant must provide alternate financial assurance as specified in Paragraph A.2 of this Section within 30 days after notification of such a finding.*

Motiva acknowledges the above citation.

- ix. A permit holder or applicant may meet the requirements of Subparagraph A.2.i of this Section for closure and/or post-closure by obtaining a written guarantee, hereafter referred to as a "corporate guarantee." The guarantor must be the parent corporation of the permit holder or applicant. The guarantor must meet the requirements and submit all information required for permit holders or applicants in Clauses i-viii of this Subparagraph and must*

comply with the terms of the corporate guarantee. The corporate guarantee must accompany the items sent to the administrative authority specified in Clauses ii and iv of this Subparagraph. The terms of the corporate guarantee must be in an authentic act signed and sworn by an authorized officer of the corporation before a notary public and must provide that:

- (a). the guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Subparagraph A.2.i of this Section;*

Please refer to Appendix V.

- (b). the guarantor is the parent corporation of the permit holder or applicant of the solid waste management facility or facilities to be covered by the guarantee, and the guarantee extends to certain facilities;*

Please refer to Appendix V.

- (c). "closure plans," as used in the guarantee, refers to the plans maintained as required by the Louisiana solid waste rules and regulations for the closure and post-closure care of facilities, as identified in the guarantee;*

Please refer to Appendix V.

- (d). for value received from the permit holder or applicant, the guarantor guarantees to the Louisiana Department of Environmental Quality that the permit holder or applicant will perform closure, post-closure care, or closure and post-closure care of the facility or facilities listed in the guarantee, in accordance with the closure plan and other permit or regulatory requirements whenever required to do so. In the event that the permit holder or applicant fails to perform as specified in the closure plan, the guarantor shall do so or establish a trust fund as specified in Subparagraph A.2.d of this Section, in the name of the permit holder or applicant, in the amount*

of the current closure or post-closure cost estimates or as specified in Subparagraph A.2.b of this Section;

Please refer to Appendix V.

- (e). guarantor agrees that if, at the end of any fiscal year before termination of the guarantee, the guarantor fails to meet the financial test criteria, the guarantor shall send within 90 days after the end of the fiscal year, by certified mail, notice to the Office of Environmental Services, Water and Waste Permits Division, and to the permit holder or applicant that he intends to provide alternative financial assurance as specified in Paragraph A.2 of this Section, in the name of the permit holder or applicant, and that within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless the permit holder or applicant has done so;*

Please refer to Appendix V.

- (f). the guarantor agrees to notify the Office of Environmental Services, Water and Waste Permits Division, by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the guarantor as debtor, within 10 days after commencement of the proceeding;*

Please refer to Appendix V.

- (g). the guarantor agrees that within 30 days after being notified by the administrative authority of a determination that the guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in Paragraph A.2 of this Section in the name of the permit holder or applicant, unless the permit holder or applicant has done so;*

Please refer to Appendix V.

- (h). *the guarantor agrees to remain bound under the guarantee, notwithstanding any or all of the following: amendment or modification of the closure plan, amendment or modification of the permit, extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the permit holder or applicant pursuant to these regulations;*

Please refer to Appendix V.

- (i). *the guarantor agrees to remain bound under the guarantee for as long as the permit holder must comply with the applicable financial assurance requirements of Paragraph A.2 of this Section for the above-listed facilities, except that the guarantor may cancel this guarantee by sending notice by certified mail to the Office of Environmental Services, Water and Waste Permits Division, and the permit holder or applicant. The cancellation will become effective no earlier than 90 days after receipt of such notice by both the administrative authority and the permit holder or applicant, as evidenced by the return receipts;*

Please refer to Appendix V.

- (j). *the guarantor agrees that if the permit holder or applicant fails to provide alternative financial assurance as specified in Paragraph A.2 of this Section, and to obtain written approval of such assurance from the administrative authority within 60 days after the administrative authority receives the guarantor's notice of cancellation, the guarantor shall provide such alternate financial assurance in the name of the owner or operator;*

Please refer to Appendix V.

- (k). *the guarantor expressly waives notice of acceptance of the guarantee by the administrative authority or by the permit holder. Guarantor also expressly waives notice of amendments or*

modifications of the closure plan and of amendments or modifications of the facility permit(s);

Please refer to Appendix V.

- (l). *The wording of the corporate guarantee must be as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.*

SOLID WASTE FACILITY

CORPORATE GUARANTEE FOR LIABILITY COVERAGE, CLOSURE, AND/OR POST-CLOSURE CARE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the state of [insert name of state], hereinafter referred to as guarantor, to the Louisiana Department of Environmental Quality, obligee, on behalf of our subsidiary [insert the name of the permit holder or applicant] of [business address].

Recitals

1. The guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in LAC 33:VII.727.A.2.i.ix.

2. [Subsidiary] is the [insert "permit holder," "applicant for a permit"] hereinafter referred to as [insert "permit holder" or "applicant"] for the following solid waste facility covered by this guarantee: [List the site identification number, site name, facility name, and facility permit number. Indicate for each facility whether guarantee is for liability coverage, closure, and/or post-closure and the amount of annual aggregate liability coverage, closure, and/or post-closure costs covered by the guarantee]

[Fill in Paragraphs 3 and 4 below if the guarantee is for closure and/or post-closure.]

3. "Closure plans" as used below refers to the plans maintained as required by the *Louisiana Administrative Code*, Title 33, Part VII, for the closure and/or post-closure care of the facility identified in Paragraph 2 above.

4. For value received from [insert "permit holder" or "applicant"], guarantor guarantees to the Louisiana Department of Environmental Quality that in the event that [insert "permit holder" or "applicant"] fails to perform [insert "closure," "post-closure care," or "closure and post-closure care"] of the above facility in accordance with the closure plan and other permit requirements whenever required to do so, the guarantor shall do so or shall establish a trust fund as specified in LAC 33:VII.727.A.2.d as

applicable, in the name of [insert "permit holder" or "applicant"] in the amount of the current closure and/or post-closure estimates as specified in LAC 33:VII.727.A.2.

[Fill in Paragraphs 5 and 6 below if the guarantee is for liability coverage.]

5. For value received from [insert "permit holder" or "applicant"], guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by sudden and accidental occurrences arising from operations of the facility covered by this guarantee that in the event that [insert "permit holder" or "applicant"] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by sudden and accidental occurrences arising from the operation of the above-named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor will satisfy such judgment(s), award(s), or settlement agreement(s) up to the coverage limits identified above.

6. The guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the administrative authority and to [insert "permit holder" or "applicant"] that he intends to provide alternative financial assurance as specified in [insert "LAC 33:VII.727.A.1" and/or "LAC 33:VII.727.A.2"], as applicable, in the name of the [insert "permit holder" or "applicant"], within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless [insert "permit holder" or "applicant"] has done so.

7. The guarantor agrees to notify the administrative authority, by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

8. The guarantor agrees that within 30 days after being notified by the administrative authority of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of [insert "liability coverage" or "closure and/or post-closure care"] he shall establish alternate financial assurance as specified in [insert "LAC 33:VII.727.A.1" and/or "LAC 33:VII.727.A.2"] as applicable, in the name of [insert "permit holder" or "applicant"] unless [insert "permit holder" or "applicant"] has done so.

9. The guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: [if the guarantee is for closure and post-closure insert "amendment or modification of the closure and or post-closure care, the extension or reduction of the time or performance of closure and/or post-closure"] or any other modification or alternation of an obligation of the [insert "permit holder" or "applicant"] pursuant to the *Louisiana Administrative Code*, Title 33, Part VII.

10. The guarantor agrees to remain bound under this guarantee for as long as the [insert "permit holder" or "applicant"] must comply with the applicable financial

assurance requirements of [insert "LAC 33:VII.727.A.1" and/or "LAC 33:VII.727.A.2"] for the above-listed facility except that guarantor may cancel this guarantee by sending notice by certified mail, to the administrative authority and to the [insert "permit holder" or "applicant"], such cancellation to become effective no earlier than 90 days after receipt of such notice by both the administrative authority and the [insert "permit holder" or "applicant"], as evidenced by the return receipts.

11. The guarantor agrees that if the [insert "permit holder" or "applicant"] fails to provide alternative financial assurance as specified in [insert "LAC 33:VII.727.A.1" and/or "LAC 33:VII.727.A.2"], as applicable, and obtain written approval of such assurance from the administrative authority within 60 days after a notice of cancellation by the guarantor is received by the administrative authority from guarantor, guarantor shall provide such alternate financial assurance in the name of the [insert "permit holder" or "applicant"].

12. The guarantor expressly waives notice of acceptance of this guarantee by the administrative authority or by the [insert "permit holder" or "applicant"]. Guarantor expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in LAC 33:VII.727.A.2.i.ix.(l), effective on the date first above written.

Effective date: _____

[Name of Guarantor]

[Authorized signature for guarantor]

[Typed name and title of person signing]

Thus sworn and signed before me this [date].

Please refer to Appendix V.

- j. Local Government Financial Test. An owner or operator that satisfies the requirements of Clauses A.2.j.i-iii of this Section may demonstrate financial assurance up to the amount specified in Clause A.2.j.iv of this Section.*

The above citation is not applicable. Motiva will establish and maintain financial assurance for closure by means of the financial test mechanism.

- k. Local Government Guarantee. An owner or operator may demonstrate financial assurance for closure, post-closure,*

and corrective action, as required by Paragraphs A.1-2 of this Section, by obtaining a written guarantee provided by a local government. The guarantor must meet the requirements of the local government financial test in Subparagraph A.2.j of this Section, and must comply with the terms of a written guarantee.

The above citation is not applicable. Motiva will establish and maintain financial assurance for closure by means of the financial test mechanism.

M. Special Requirements

The administrative authority may require additional information for special processes or systems and for supplementary environmental analysis.

No response is required.

LAC 33:VII.523

**PART III
ADDITIONAL
SUPPLEMENTARY INFORMATION**

**LOUISIANA ADMINISTRATIVE CODE
TITLE 33 - ENVIRONMENTAL QUALITY
PART VII - SOLID WASTE**

§523. Part III: Additional Supplementary Information

The following supplementary information is required for all solid waste processing and disposal facilities. All responses and exhibits must be identified in the following sequence to facilitate the evaluation:

- A. a discussion demonstrating that the potential and real adverse environmental effects of the facility have been avoided to the maximum extent possible;**

There are no known sensitive ecological areas located within the facility boundary and no known habitats for endangered species within 1,000 feet of the WWTU, as confirmed by the State of Louisiana Department of Wildlife and Fisheries (Appendix E).

The WWTU are not located in an aquifer recharge zone, as shown on the Area Fence Diagram, included as Figure 13; and an adequate dike system surrounds the site to prevent any possible floodwaters from affecting the impoundments. The WWTU are located in a relatively remote area with respect to private residences, schools, churches, etc. There are no agricultural areas within 1,000 feet of the facility.

Upon closure of the WWTU, Motiva will remove all sludges in accordance with relevant regulations. Prior to final closure, the LDEQ will be formally notified of pending closure.

- B. a cost-benefit analysis demonstrating that the social and economic benefits of the facility outweigh the environmental-impact costs;**

Motiva has been successfully operating the WWTU for 28 years and has yet to pose any detrimental effects on the environment. This on-site method of disposal provides a means of management for waste generated on-site at a reduced cost and environmental risk as compared to transporting the waste off-site. By disposing the nonhazardous waste on-site, Motiva can operate its Refinery efficiently while ensuring that the waste will be disposed of in an environmentally-sound and cost-effective manner.

- C. a discussion and description of possible alternative projects which would offer more protection to the environment without unduly curtailing nonenvironmental benefits;**

Special attention was paid to any possible effects on existing conditions that might result from the use of the WWTU. The research concerning the location

for the on-site facility revealed an area of low ecological sensitivity. Treatment of nonhazardous waste through the use of wastewater treatment has been recognized for many years as a practical, economical means of handling process wastewater generated in large quantities for which no other cost-effective technology is available. This method of treating wastewater poses little threat to the environment or the public health and provides a method of minimizing costs to the industry and indirectly to the consumer.

Due to the quality control which provides that only nonhazardous waste is treated in the Wastewater Treatment Plant, environmental impacts are minimized. Additionally, the site is inspected routinely and the monitoring wells are sampled according to current solid waste regulations to detect the potential for contamination at the earliest possible occurrence.

- D. a discussion of possible alternative facilities which would offer more protection to the environment without unduly curtailing nonenvironmental benefits; and**

This is an existing site and the use of off-site facilities would introduce increased environmental risks associated with transportation and increased economic costs.

The new East Surge Pond is being added to provide containment capacity to ensure that during times of inclement weather, discharges from the site can be avoided. The new East Surge Pond is located adjacent to the existing South Surge Pond. The proximity of the East Surge Pond to the South Surge Pond provides the maximum amount of environmental protection.

- E. a discussion and description of the mitigating measures which would offer more protection to the environment than the facility, as proposed, without unduly curtailing nonenvironmental benefits.**

Motiva has a well-established employee safety training program designed to facilitate proper performance by an employee and to provide a safe working environment for all concerned. Each employee is required to participate in all training programs related to his or her job assignment. Trained, experienced supervisory personnel are available to see that employees are equipped and have a firm foundation of knowledge of their responsibilities prior to releasing the employee into the work force. Motiva's WWTU are and will be used for the environmentally-sound treatment of nonhazardous waste generated by Motiva's refining facilities.

TABLES

TABLE 1
WELL DATA

**TABLE 1
WELL DATA**

Water Well Data

<u>WELL NO.</u>	<u>OWNER</u>	<u>WELL USE</u>	<u>WELL DEPTH (FT)</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
AN-85	DALTON, J	STOCK	280	30.1678°	90.8792°
AN-86	BROU, H	DOMESTIC	367	30.1558°	90.8889°
AN-87	SCHEXNAYDER BRO	STOCK	360	30.1544°	90.8908°
AN-108	PEDESCLEAUX, O	DOMESTIC	210	30.1203°	90.9233°
AN-119	SCHEXNAYDER BRO	DOMESTIC	338	30.1567°	90.8889°
AN-120	SCHEXNAYDER BRO	STOCK	350	30.1606°	90.8903°
AN-122	SCHEXNAYDER BRO	STOCK	349	30.1536°	90.8956°
AN-153	SOUTHDOWN INC	DOMESTIC	285	30.1233°	90.9075°
AN-154	SOUTHDOWN INC	ABANDONED	275	30.1233°	90.9014°
AN-155	SOUTHDOWN INC	ABANDONED	257	30.1258°	90.8767°
AN-190	DUPLESSIS, W I	STOCK	347	30.1508°	90.9044°
AN-431	BFI	PUBLIC SUPPLY	350	30.1475°	90.8767°
AN-502	ROBERT, A L	PUBLIC SUPPLY	300	30.1656°	90.8811°
AN-538	INDUSTRIAL MACH	PUBLIC SUPPLY	273	30.1603°	90.8775°
AN-549	SORRENTO, LA	FIRE PROT.	307	30.1644°	90.8783°
AN-5069Z	BFI	DOMESTIC	350	30.1489°	90.8675°
AN-5155Z	MELANCON, NEIL	DOMESTIC	310	30.1592°	90.8722°
AN-6064Z	TULLIER, CLAY	DOMESTIC	300	30.1600°	90.8675°
AN-6081Z	ALLEN, KENNY	DOMESTIC	330	30.1553°	90.8792°
AN-6087Z	TULLIER, JOHN	DOMESTIC	305	30.1594°	90.8697°
AN-6608Z	BOURGEOIS, BUD	DOMESTIC	430	30.1464°	90.8764°
AN-7127Z	WILLIAMS, MARY	DOMESTIC	290	30.1606°	90.8867°
AN-7355Z	PERCK, ROBERT	DOMESTIC	340	30.1550°	90.8806°
AN-7589Z	DARRAN, M & CO	PUBLIC SUPPLY	300	30.1597°	90.8769°
AN-7913Z	WILSON, CLOYD	DOMESTIC	340	30.1578°	90.8830°
AN-8092Z	LAMBERT, VAN	IRRIGATION	300	30.1592°	90.8686°
AN-8112Z	KERR, RANDY	DOMESTIC	300	30.1578°	90.8714°
AN-8184Z	TULLIER, KOLBY	DOMESTIC	300	30.1519°	90.8711°
AN-8808Z	WILSON, TONY	DOMESTIC	340	30.1583°	90.8844°
AN-9016Z	TULLIER, COLBY	DOMESTIC	300	30.1575°	90.8722°
AN-9168Z	WAGUESPACK, B	DOMESTIC	270	30.1603°	90.8692°
SJ-68	HYMEL BROTHERS	STOCK	87	30.1022°	90.8628°
SJ-144	ANCIENT DOMAIN	ABANDONED	171	30.0911°	90.9039°
SJ-145	ANCIENT DOMAIN	STOCK	395	30.0953°	90.8917°
SJ-146	ANCIENT DOMAIN	ABANDONED	377	30.0983°	90.8833°
SJ-147	ANCIENT DOMAIN	STOCK	374	30.0972°	90.8758°
SJ-157	ALTEX READY MIX	ABANDONED	130	30.0986°	90.9069°
SJ-161	ALTEX READY MIX	INDUSTRIAL	104	30.0986°	90.9069°
SJ-170	STAR ENTERPRISE	INDUSTRIAL	250	30.1061°	90.8953°
SJ-5014Z	LA POWER & LIGHT	DOMESTIC	235	30.1178°	90.8694°

Well No. Location

AN - Ascension Parish

SJ - St. James Parish

TABLE 1
WELL DATA

Oil and Gas Well Data

<u>SERIAL NO.</u>	<u>WELL NAME</u>	<u>STATUS</u>	<u>TOTAL DEPTH</u> <u>(FT)</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
28871	REALTY OPERATORS INC	Permit Expired	0	30.1233°	90.9016°
29436	REALTY OPERATORS INC	Permit Expired	0	30.1233°	90.9016°
48103	WAGUESPACK BROS INC	Dry & Plugged	11361	30.1346°	90.9175°
48822	S T ALCUS JR ETAL	Dry & Plugged	10505	30.1542°	90.8613°
52271	WAGUESPACK CO INC	Dry & Plugged	11500	30.1661°	90.8892°
68298	WAGUESPACK	Dry & Plugged	11510	30.1161°	90.8967°
70299	WAGUESPACK	Dry & Plugged	11503	30.1088°	90.8933°
71024	WAGUESPACK	Dry & Plugged	10752	30.1124°	90.8943°
75109	CRAWFORD & THIBAUT INC	Dry & Plugged	11950	30.1175°	90.9275°
82392	WAGUESPACK CO INC ET AL	Dry & Plugged	10536	30.1100°	90.9027°
132056	HARRY STEIN	Dry & Plugged	11660	30.1025°	90.9070°
138812	J H THIBAUT	Dry & Plugged	11380	30.1116°	90.9209°
147721	HARRY STEIN	Dry & Plugged	11393	30.1022°	90.8882°
150330	PELTO OIL CO	Dry & Plugged	11000	30.1266°	90.8680°
157562	PELTO OIL COMPANY	Dry & Plugged	11000	30.1338°	90.8907°
160588	PELTO OIL	Dry & Plugged	11050	30.1352°	90.8785°
162962	PELTO OIL CO	Dry & Plugged	11108	30.1215°	90.8897°
165331	HARRY STEIN	Dry & Plugged	11500	30.1102°	90.8664°
165835	CASSO AND CAFIERO	Dry & Plugged	11512	30.1483°	90.8613°
970943	WASTE DISPOSAL	Plugged & Abandoned	4110	30.1119°	90.8980°
970944	WASTE DISPOSAL	Plugged & Abandoned	3950	30.1120°	90.9030°
970945	WASTE DISPOSAL	Plugged & Abandoned	3978	30.1113°	90.9060°
970946	WASTE DISPOSAL	Plugged & Abandoned	3950	30.1101°	90.9058°
970947	WASTE DISPOSAL	Plugged & Abandoned	3966	30.1120°	90.9060°
971011	WASTE DISPOSAL (UNION)	Dry & Plugged	2200	30.1072°	90.9058°

TABLE 2

GROUNDWATER MONITORING WELL DATA

Table 2
Groundwater Monitoring Well Data

SITE MONITORING WELL NO.	SW-1	SW-2R	SW-3	SW-4	SW-5
Latitude	30°07'3.01"	30°07'2.56"	30°06'43.95"	30°06'46.67"	30°06'53.98"
Longitude	90°53'29.15"	90°53'38.9"	90°53'20.25"	90°53'11.99"	90°53'14.72"
Latitude/Longitude Method	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927
Facility Monitored	Post-Closure & WWTU	Post-Closure & WWTU	Post-Closure & WWTU	Post-Closure & WWTU	Post-Closure & WWTU
Associated Permit Number	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126
Well Type	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
Well Status	Active	Active	Active	Active	Active
Gradient	Up	Up	Down	Down	Down
Casing Diameter (inches)	3"	3"	3"	3"	3"
Casing Material	PVC	PVC	PVC	PVC	PVC
Date Completed (yy,mm,dd)	07/25/83	07/02/98	07/30/83	8/7/83	8/3/83
Zone Monitored	Intermediate	Deep	Deep	Deep	Deep
Top of Casing Elevation (NGVD)	14.97'	13.29'	11.66'	11.50'	11.62'
Well Depth at Installation (feet, BGS)	23'	30'	33'	33'	33'
Ground Surface Elevation (NGVD)	12.4'	10.3'	9.2'	8.9'	9.1'
Top of Screened Interval (NGVD)	-0.6'	-12.2'	-13.8'	-14.1'	-13.9'
Bottom of Screened Interval (NGVD)	-5.6'	-17.2'	-18.8'	-19.1'	-18.9'
Sump Length (feet)	5'	2.5'	5'	5'	5'

Table 2
Groundwater Monitoring Well Data

SITE MONITORING WELL NO.	SW#6	SW#7	SW#8	SW#9	SW#10
Latitude	30°07'01.43"	30°06'57.63"	30°06'50.33"	30°06'44.31"	30°07'01.02"
Longitude	90°53'18.22"	90°53'17.21"	90°53'13.60"	90°53'16.69"	90°53'43.99"
Latitude/Longitude Method	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927
Facility Monitored	Post-Closure & WWTU	Post-Closure & WWTU	Post-Closure & WWTU	Post-Closure & WWTU	Post-Closure & WWTU
Associated Permit Number	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126
Well Type	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
Well Status	Active	Active	Active	Active	Active
Gradient	Down	Down	Down	Down	Up
Casing Diameter (inches)	3"	4"	4"	4"	4"
Casing Material	PVC	PVC	PVC	PVC	PVC
Date Completed (yy,mm,dd)	7/26/83	6/10/87	6/11/87	6/11/87	6/15/87
Zone Monitored	Deep	Intermediate	Intermediate	Intermediate	Intermediate
Top of Casing Elevation (NGVD)	8.95'	12.11'	12.00'	13.05'	14.33'
Well Depth at Installation (feet, BGS)	33'	20'	20'	18'	20'
Ground Surface Elevation (NGVD)	6.4'	10.4'	9.5'	10.5'	10.5'
Top of Screened Interval (NGVD)	-16.6'	-1.6'	-5.5'	0.5'	-1.5'
Bottom of Screened Interval (NGVD)	-21.6'	-6.6'	-10.5'	-4.5'	-6.5'
Sump Length (feet)	5'	3'	3'	3'	3'

Table 2
Groundwater Monitoring Well Data

SHE MONITORING WELL NO.	SW-11	SW-12	SW-13	SW-14	SW-15
Latitude	30°06'50.53"	30°06'53.91"	30°06'56.48"	30°06'57.67"	30°07'3.39"
Longitude	90°53'22.86"	90°53'23.74"	90°53'20.62"	90°53'17.00"	90°53'19.15"
Latitude/Longitude Method	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927
Facility Monitored	Post-Closure	Post-Closure	Post-Closure	Post-Closure	Post-Closure
Associated Permit Number	LAD 065-485-146-PC-1	LAD 065-485-146-PC-1	LAD 065-485-146-PC-1	LAD 065-485-146-PC-1	LAD 065-485-146-PC-1
Well Type	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
Well Status	Active	Active	Active	Active	Active
Gradient	Down	Down	Down	Down	Down
Casing Diameter (inches)	4"	4"	4"	4"	4"
Casing Material	PVC	PVC	PVC	PVC	PVC
Date Completed (yy,mm,dd)	6/21/90	6/19/90	6/21/60	6/21/90	6/20/90
Zone Monitored	Shallow	Shallow	Shallow	Shallow	Shallow
Top of Casing Elevation (NGVD)	13.21'	12.30'	13.47'	12.41'	7.51'
Well Depth at Installation (feet, BGS)	9'	10'	10'	10'	8'
Ground Surface Elevation (NGVD)	10.8'	9.8'	11.2'	10.4'	5.2'
Top of Screened Interval (NGVD)	5.8'	4.8'	6.2'	6.4'	2.2'
Bottom of Screened Interval (NGVD)	1.8'	-0.2'	1.2'	0.4'	-2.8'
Sump Length (feet)	0'	0'	0'	0'	0'

Table 2
Groundwater Monitoring Well Data

SITE MONITORING WELL NO.	SW-16	SW-17	SW-18	SW-19	SW-20
Latitude	30°07'01.05"	30°07'02.57"	30°07'00.19"	30°06'59.09"	30°07'03.35"
Longitude	90°53'43.78"	90°52'58.91"	90°53'01.93"	90°53'07.39"	90°53'12.65"
Latitude/Longitude Method	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927
Facility Monitored	Post-Closure	Biosludge	Biosludge	Biosludge	Biosludge
Associated Permit Number	LAD 065-485-146-PC-1	P-0246	P-0246	P-0246	P-0246
Well Type	Monitoring	Monitoring	Monitoring	Monitoring	Monitoring
Well Status	Active	Active	Active	Active	Active
Gradient	Up	Down	Down	Down	Up
Casing Diameter (inches)	4"	4"	4"	4"	4"
Casing Material	PVC	PVC	PVC	PVC	PVC
Date Completed (yy,mm,dd)	6/20/90	11/16/90	11/15/90	11/15/90	11/16/90
Zone Monitored	Shallow	Intermediate	Intermediate	Intermediate	Intermediate
Top of Casing Elevation (NGVD)	14.00'	10.59'	10.13'	9.82'	14.40'
Well Depth at Installation (feet, BGS)	10.5'	17.5'	21.5'	17'	24'
Ground Surface Elevation (NGVD)	10.4'	8.2'	7.9'	7.7'	11.4'
Top of Screened Interval (NGVD)	4.9'	-1.8'	-6.1'	-1.8'	-5.1'
Bottom of Screened Interval (NGVD)	-0.1'	-6.8'	-11.1'	-6.8'	-10.1'
Sump Length (feet)	0'	2.5'	2.5'	2.5'	2.5'

Table 2
Groundwater Monitoring Well Data

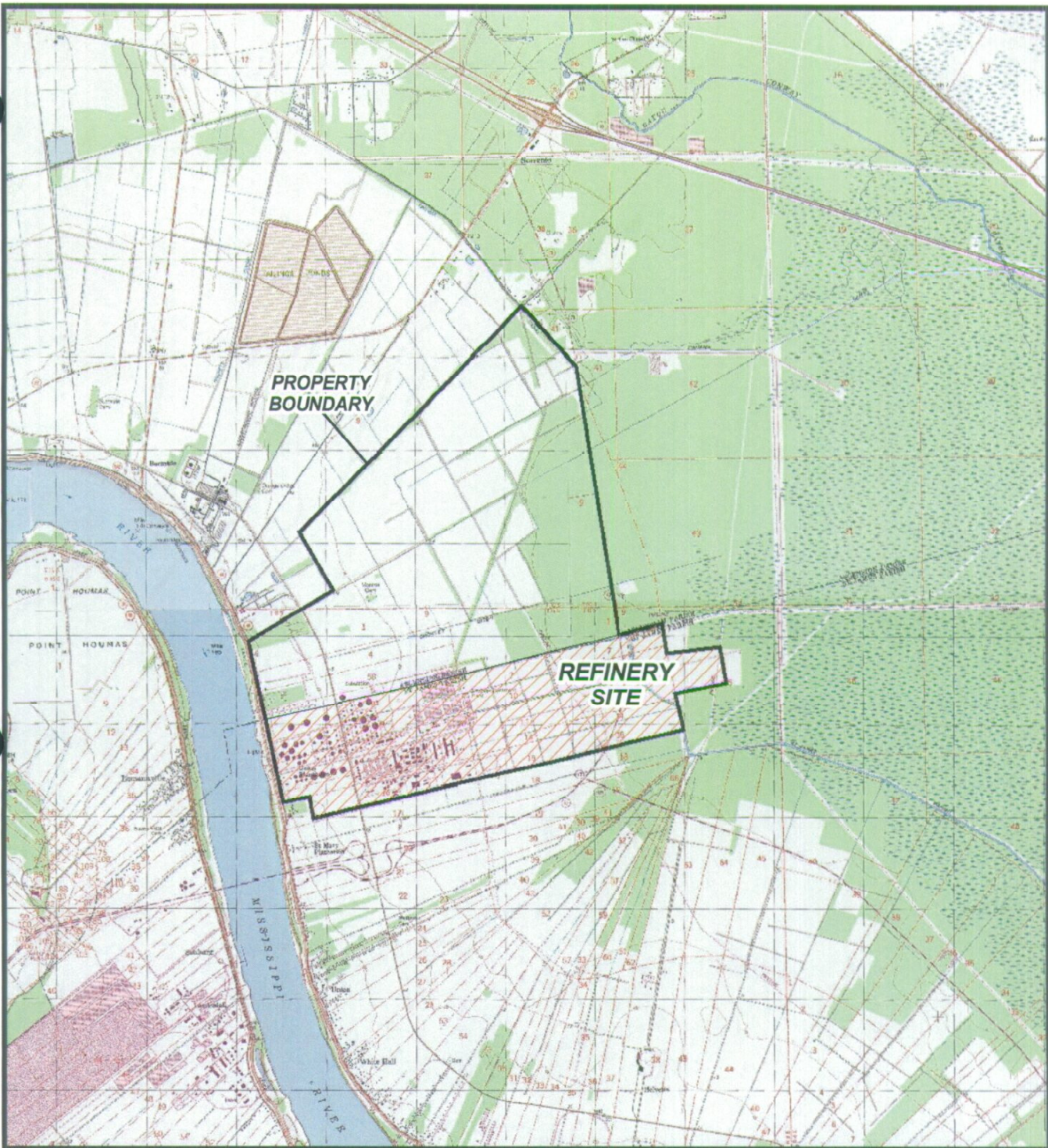
SITE MONITORING WELL NO.	MW-1	MW-2	MW-3	MW-4
Latitude	30°07'01.00"	30°06'44.36"	30°06'52.00"	30°06'59.13"
Longitude	90°53'44.20"	90°53'16.48"	90°53'14.20"	90°53'18.09"
Latitude/Longitude Method	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927	Geodetic NAD 1927
Facility Monitored	Post-Closure & WWTU	Post-Closure & WWTU	Post-Closure & WWTU	Post-Closure & WWTU
Associated Permit Number	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126	LAD 065-485-146-PC-1 & P-0126
Well Type	Monitoring	Monitoring	Monitoring	Monitoring
Well Status	Inactive	Inactive	Inactive	Inactive
Gradient	Up	Down	Down	Down
Casing Diameter (inches)	4"	4"	4"	4"
Casing Material	PVC	PVC	PVC	PVC
Date Completed (yy.mm.dd)				
Zone Monitored	100' Zone	100' Zone	100' Zone	100' Zone
Top of Casing Elevation (NGVD)	13.36'	13.88'	12.86'	13.27'
Well Depth at Installation (feet, BGS)	116'	119'	116'	111'
Ground Surface Elevation (NGVD)	10.4'	10.9'	9.2'	10.2'
Top of Screened Interval (NGVD)	-90.6'	-93.1'	-91.8'	-85.8'
Bottom of Screened Interval (MGVD)	-100.6'	-103.1'	-101.8'	-95.8'
Sump Length (feet)	5'	5'	5'	5'

Table 2
Groundwater Monitoring Well Data

SEE MONITORING WELL NO.	MW-21	MW-22
Latitude	30°06'48.7"	30°06'53.2"
Longitude	90°53'08.9"	90°53'10.1"
Latitude/Longitude Method		
Facility Monitored	WWTU	WWTU
Associated Permit Number	P-0126	P-0126
Well Type	Monitoring	Monitoring
Well Status	Active	Active
Gradient		
Casing Diameter (inches)	0.75"	0.75"
Casing Material	PVC	
Date Completed (yy,mm,dd)	04/14/05	04/14/05
Zone Monitored	Shallow	Shallow
Top of Casing Elevation (NGVD)		
Well Depth at Installation (feet, BGS)	10'	12'
Ground Surface Elevation (NGVD)		
Top of Screened Interval (NGVD)		
Bottom of Screened Interval (NGVD)		
Sump Length (feet)	No sump	No sump

FIGURES

FIGURE 1
VICINITY MAP



SITE LOCATION

Legend

- Refinery Site
- Property Boundary



Reference

*U.S.G.S. 7.5 MINUTE SERIES QUAD MAP, GONZALES, LA, SORRENTO, LA, DONALDSONVILLE, LA, AND CONVENT, LA.



MOTIVA ENTERPRISES LLC
CONVENT REFINERY

SOLID WASTE PERMIT APPLICATION

VICINITY MAP

ASCENSION / ST. JAMES PARISH

CK ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING CONSULTANTS

Drawn:	JDW/AV9.0
Checked:	AMB
Approved:	WWG
Date:	06/13/2005
Dwg. No.:	A1983W-01

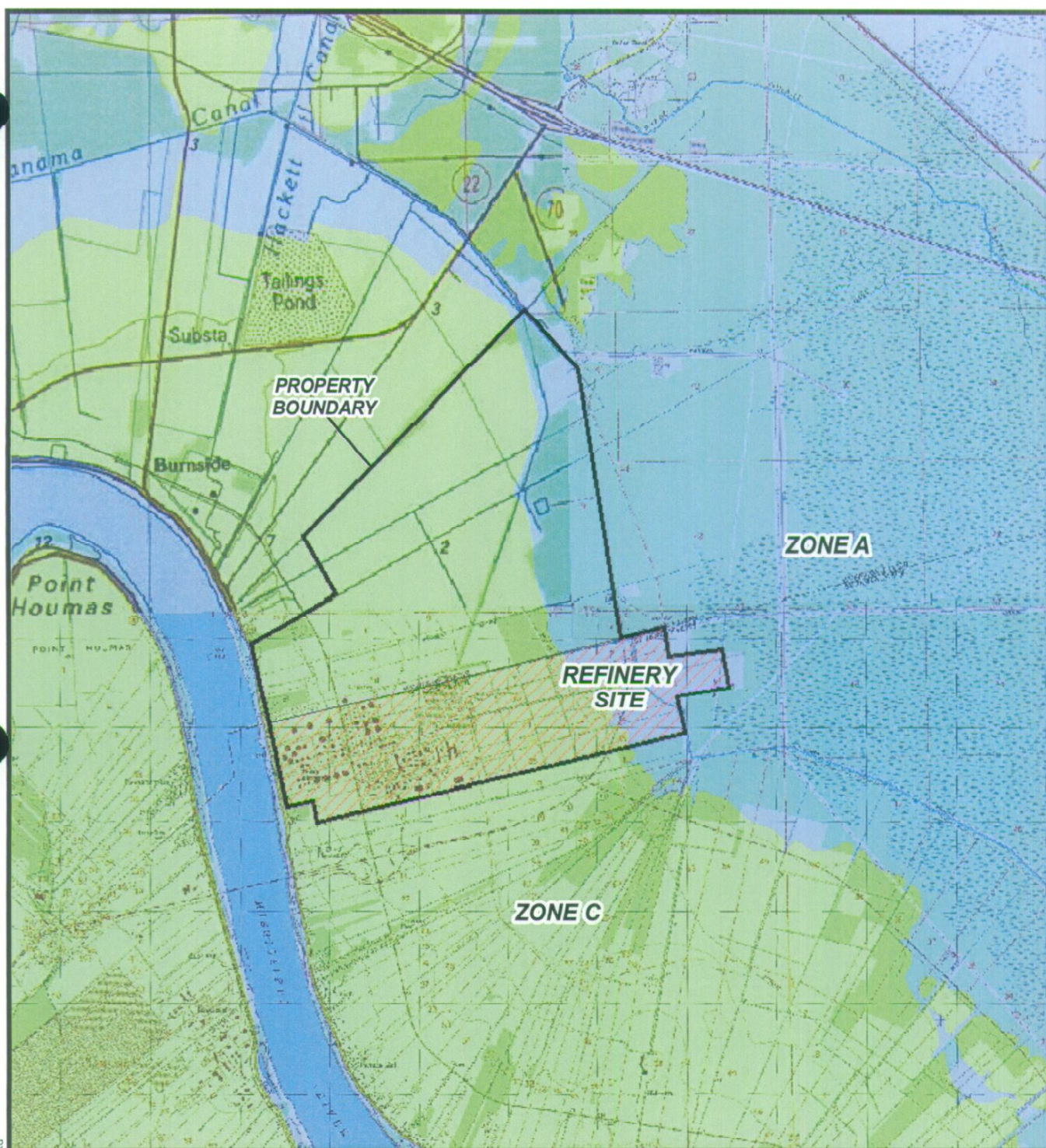
FIGURE 1

FIGURE 2

2004 AERIAL PHOTOGRAPH

71983W-Motiva/Annap/B1983W-02-DOQ.mxd

FIGURE 3
FLOOD ZONE MAP



SITE LOCATION

Legend

- Refinery Site
- Property Boundary
- FEMA Q3 Flood Data
- ZONE C - AREA OF 100 YEAR FLOOD
- ZONE A - AREA OF MINIMAL FLOODING

0 2,000 5,000 10,000
Feet

Reference

U.S.G.S. 7.5 MINUTE SERIES QUAD MAP, GONZALES, LA, SORRENTO, LA, DONALDSONVILLE, LA, AND CONVENT, LA.
*100 YEAR FLOOD DATA TAKEN FROM <http://msc.fema.gov/femaFAQ.shtml>
Q3 DIGITAL FLOOD DATA



MOTIVA ENTERPRISES LLC
CONVENT REFINERY

SOLID WASTE PERMIT APPLICATION

FLOOD ZONE MAP

ASCENSION / ST. JAMES PARISH

CK
ASSOCIATES, LLC
ENVIRONMENTAL & ENGINEERING
CONSULTANTS

Drawn:	JDW/AV9.0
Checked:	AMB
Approved:	WWG
Date:	06/13/2005
Dwg. No.:	A1983W-03

FIGURE 3

FIGURE 4
AREA MASTER PLAN

FIGURE 5
WELL LOCATION MAP

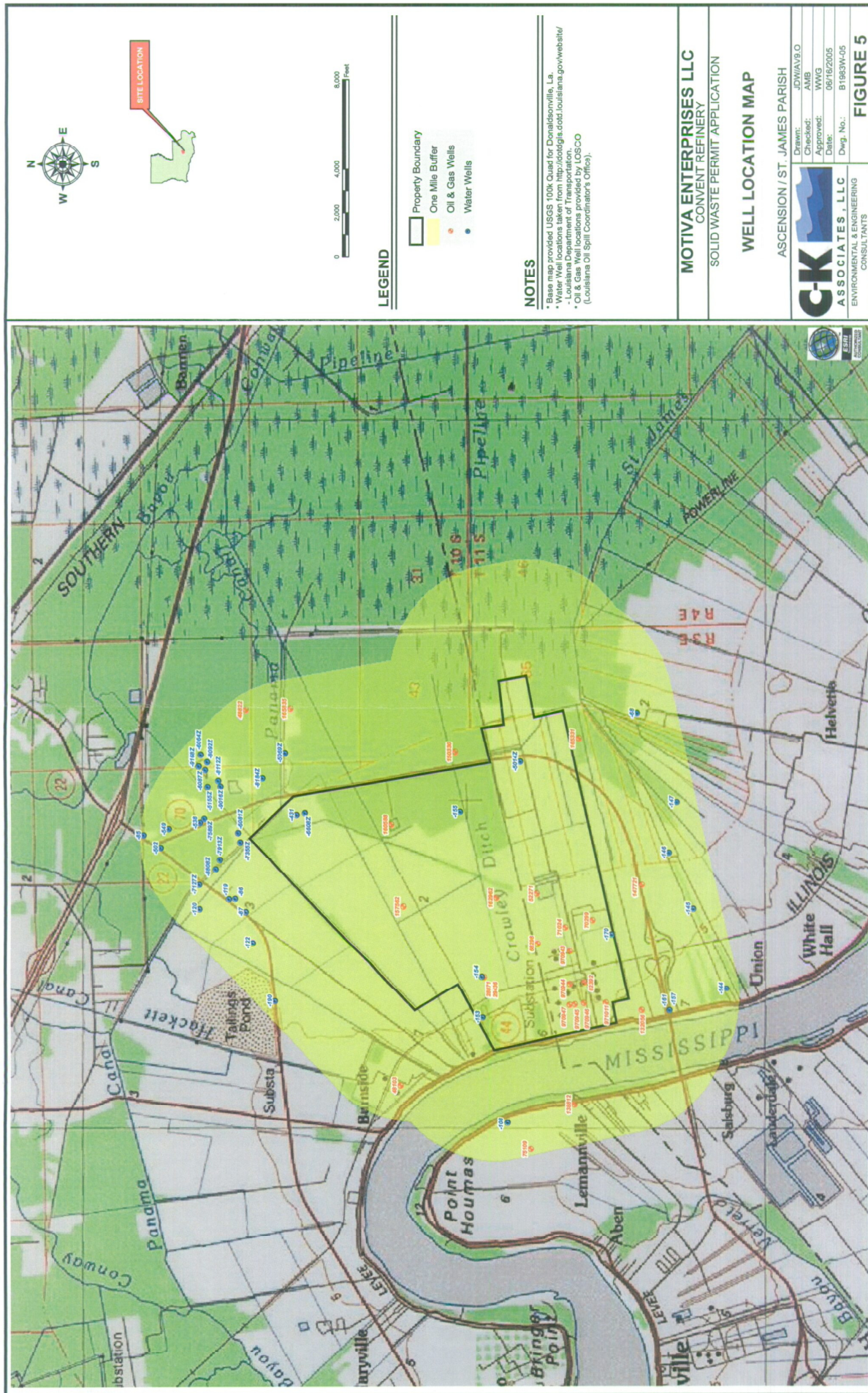


FIGURE 6
UTILITIES LOCATION MAP

FIGURE 7
GENERAL PLANT OVERAL PLOT PLAN

FIGURE 8
GENERAL WASTE WATER TREATING

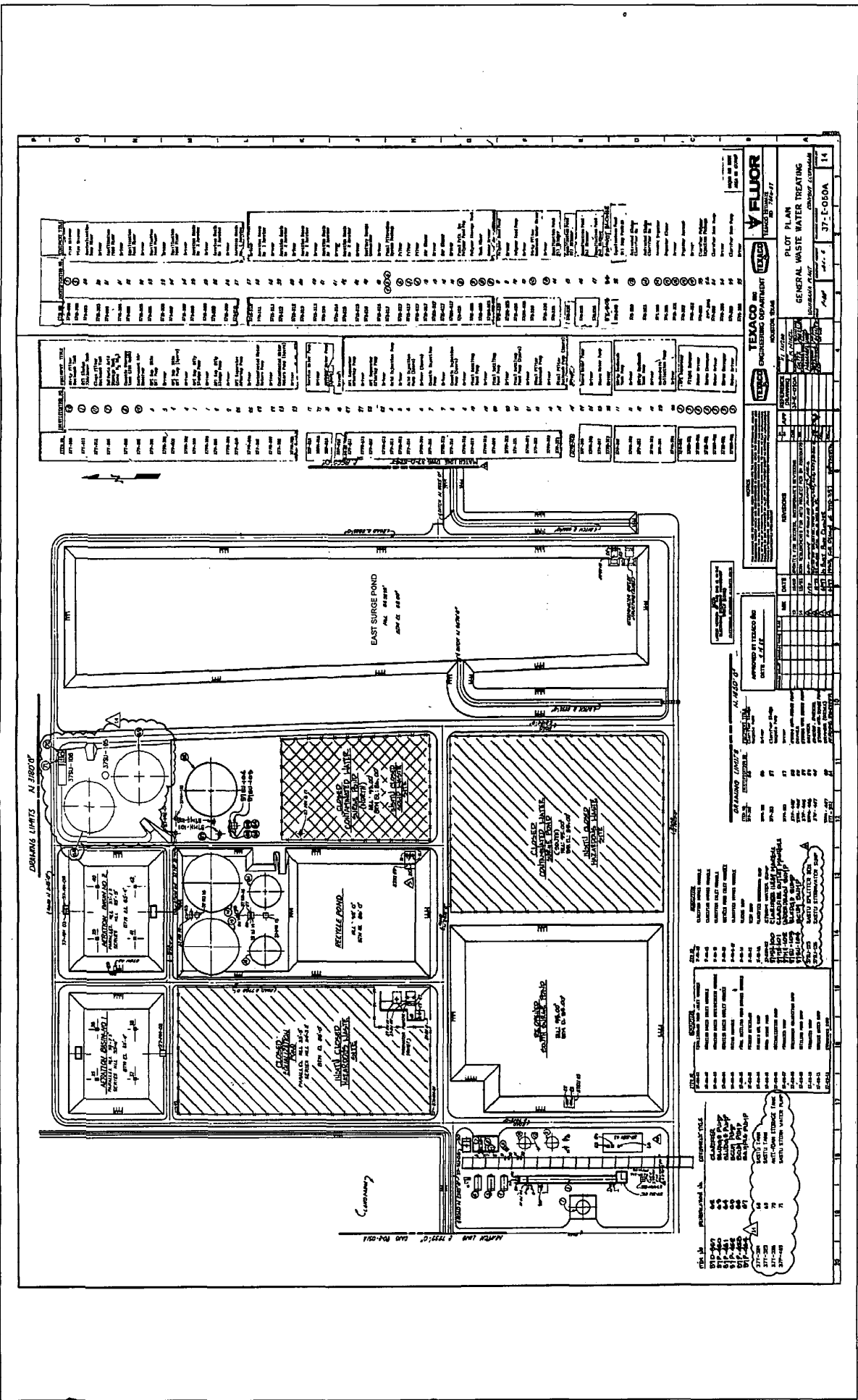


FIGURE 9

**TYPICAL GEOLOGIC CROSS SECTION FOR
ACTIVATED SLUDGE CLARIFIERS**

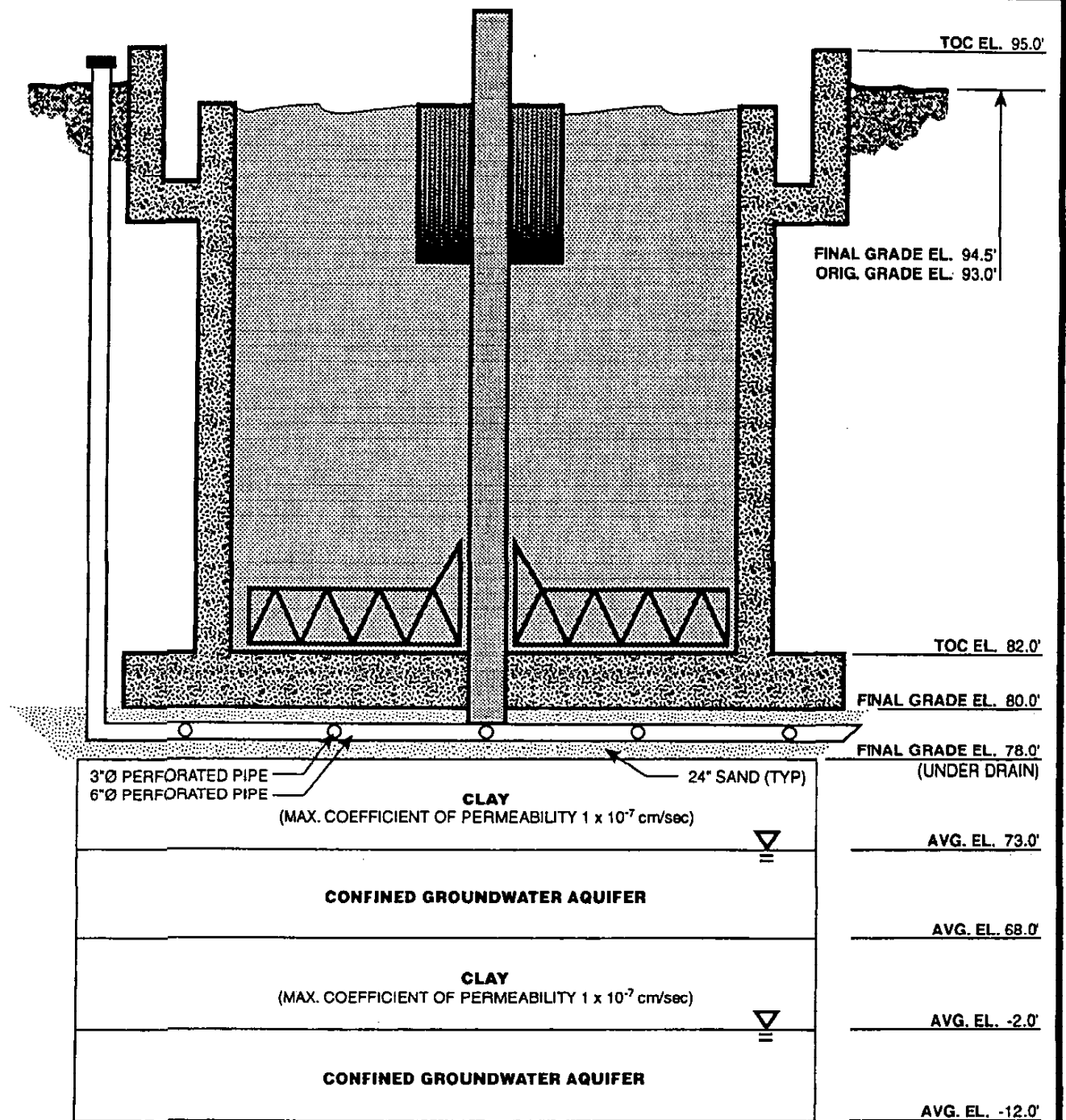


FIGURE 9

NOTES:

1. DRAWING NOT TO SCALE
2. PLAN DATUM 89.0 FT. = 0.0 FT. MSL
3. REFERENCE FIGURE 17B OF STAR'S FIRST PERMIT APPLICATION.

StarEnterprise Louisiana Plant	
SOLID WASTE STANDARD PERMIT RENEWAL	
TYPICAL GEOLOGIC CROSS SECTION FOR ACTIVATED SLUDGE CLARIFIERS	
ST. JAMES PARISH	
PREPARED BY:	DATE: DECEMBER 15, 1993
C-K ASSOCIATES, INC.	FILE NO. A57-313-12

FIGURE 10

**TYPICAL CROSS SECTION FOR AEROBIC DIGESTER
TANK**

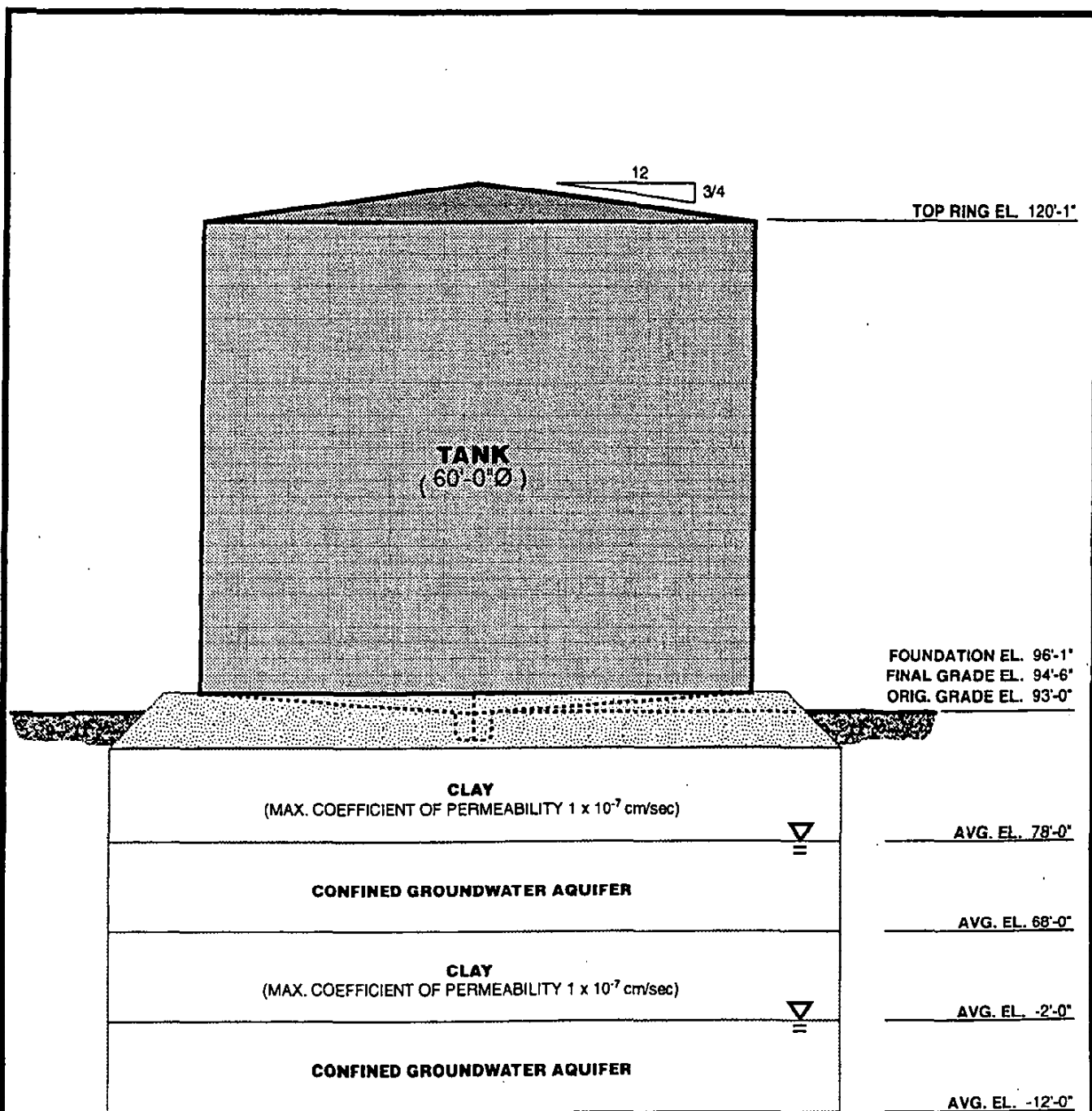


FIGURE 10

NOTES:

1. DRAWING NOT TO SCALE
2. PLAN DATUM 89.0 FT. = 0.0 FT. MSL
3. REFERENCE FIGURE 17B OF STAR'S FIRST PERMIT APPLICATION.


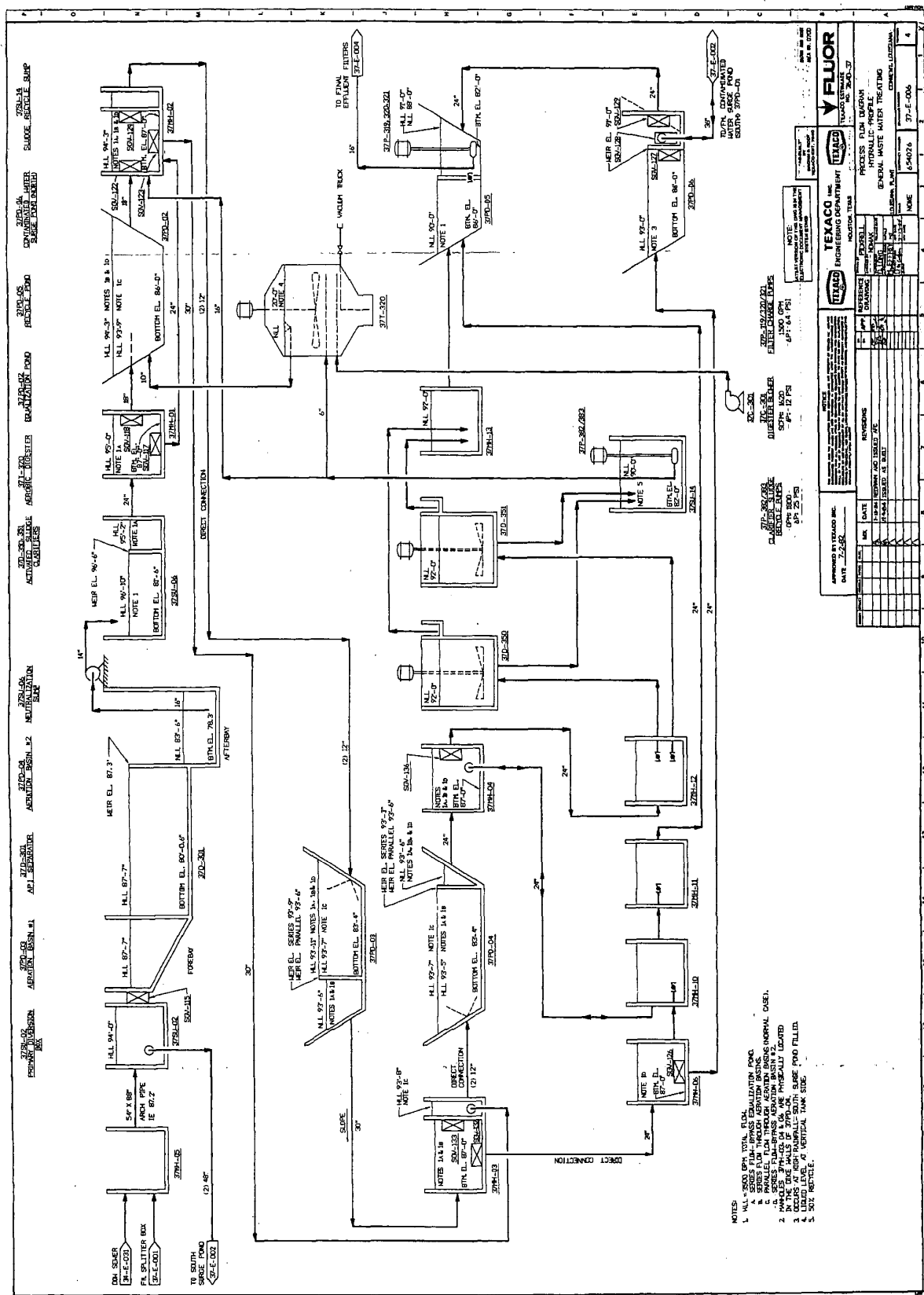
StarEnterprise  Louisiana Plant	
SOLID WASTE STANDARD PERMIT RENEWAL	
TYPICAL CROSS SECTION FOR AEROBIC DIGESTER TANK	
ST. JAMES PARISH	
PREPARED BY: C-K ASSOCIATES, INC.	DATE: DECEMBER 15, 1993 FILE NO. A57-313-13

FIGURE 11
WASTEWATER FLOW DIAGRAM

FIGURE 12

**PROCESS FLOW DIAGRAM HYDRAULIC PROFILE
GENERAL WASTE WATER TREATING**



- NOTES:
1. ALL 300 GPM PUMP, 100'.
 2. ALL 24" DIA. TANKS, 10'.
 3. ALL 24" DIA. TANKS, 10'.
 4. ALL 24" DIA. TANKS, 10'.
 5. ALL 24" DIA. TANKS, 10'.

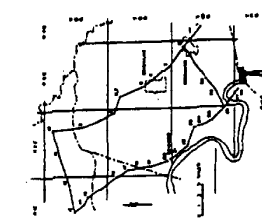
APPROVED BY: [Signature]
DATE: 12-15-00

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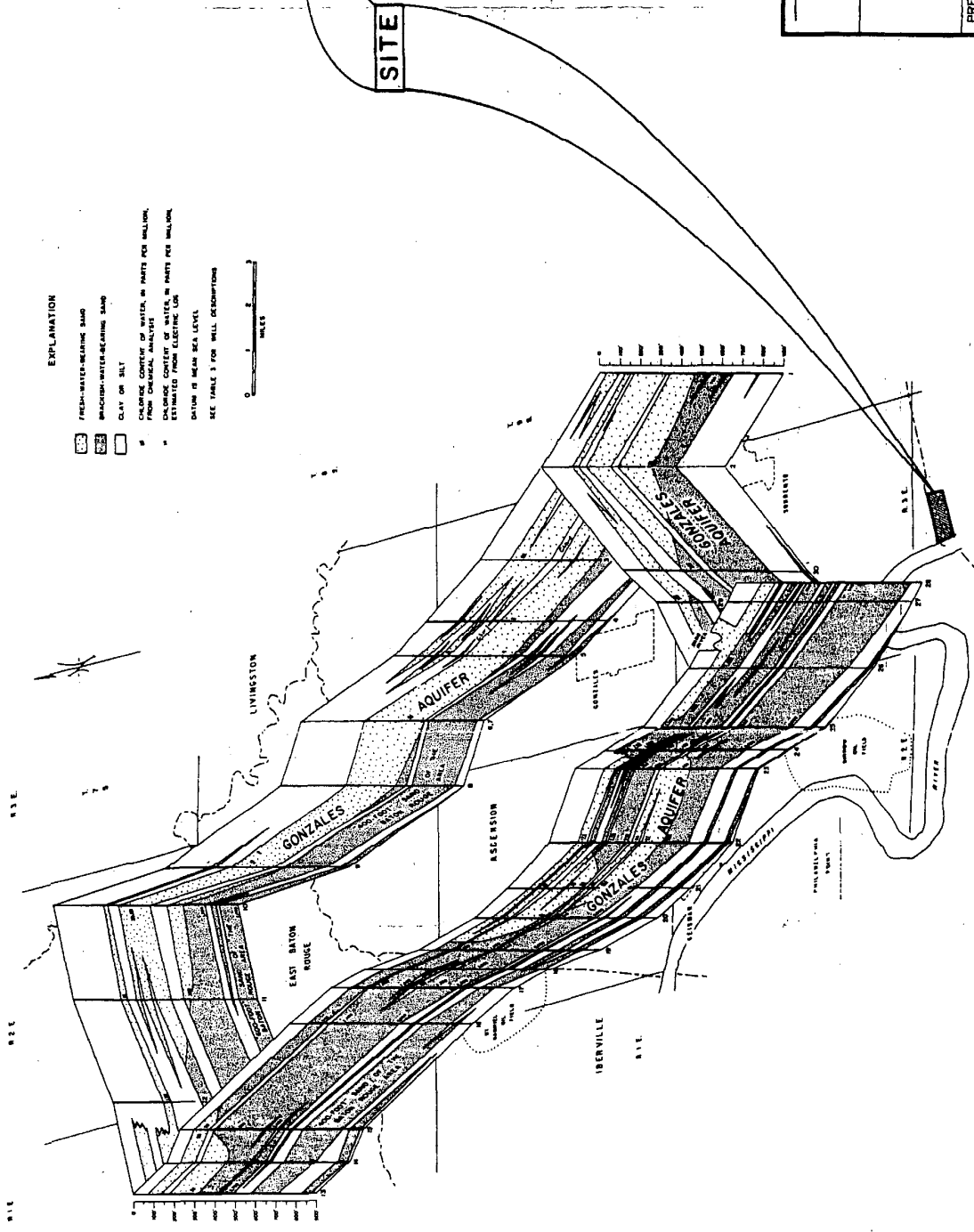
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270-4C
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270-5B
270-5C
270-6A
270-6B
270-6C

FIGURE 13
AREA FENCE DIAGRAM



EXPLANATION

- FRESH-WATER-BEARING SAND
- BRACKISH-WATER-BEARING SAND
- CLAY OR SILT
- CHLORIDE CONTENT OF WATER, IN PARTS PER MILLION, FROM CHEMICAL ANALYSIS
- CHLORIDE CONTENT OF WATER, IN PARTS PER MILLION, ESTIMATED FROM ELECTRIC LOG
- DATUM IS MEAN SEA LEVEL
- SEE TABLE 3 FOR WELL DESCRIPTIONS



NOTE:

BASE MAP TAKEN FROM STATE OF LOUISIANA WATER RESOURCES BULLETIN NO. 7 "GROUND WATER IN THE GEISMAR-GONZALES AREA, ASCENSION PARISH, LOUISIANA", PLATE I, DATED OCTOBER, 1965.

REFERENCE:

C-K DRAWING NO. B57-216-33

FIGURE 13

StarEnterprise

Louisiana Plant

SOLID WASTE STANDARD PERMIT RENEWAL

AREA FENCE DIAGRAM

PREPARED BY: ST. JAMES PARISH

DATE: DECEMBER 14, 1993

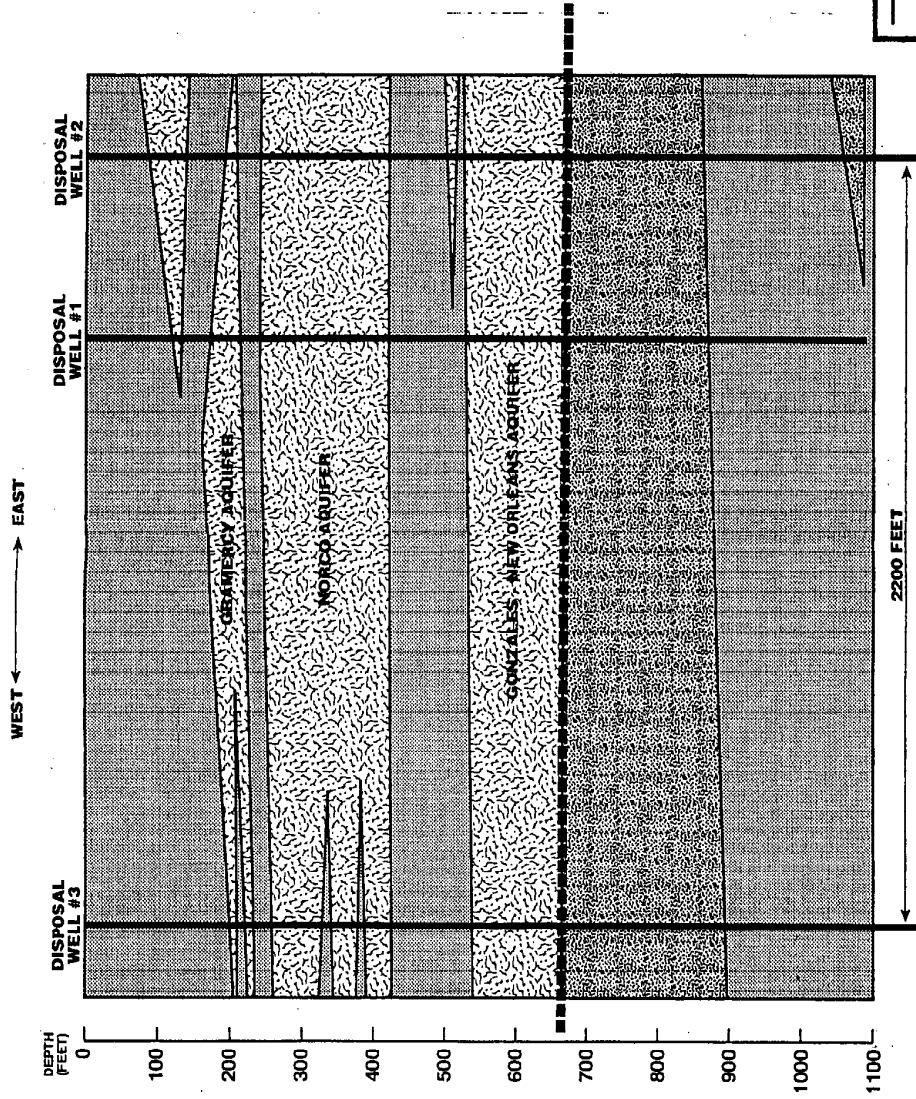
FILE NO. B57-313-07

C-K ASSOCIATES, INC.
BATON ROUGE, LOUISIANA

Plate 1. Geologic sections in the Geismar-Gonzales area, Louisiana, show the extent of the major aquifers and the chloride content of ground water.

FIGURE 14

PERTINENT STRATA CROSS-SECTION TO 1,100 FEET



LEGEND:

- FRESH WATER BEARING SAND
- BRACKISH WATER BEARING SAND
- CLAY OR SILT
- FRESH/BRACKISH WATER APPROXIMATE BOUNDARY BASED ON LOG RESISTIVITY

FIGURE 14

StarEnterprise
Louisiana Plant
SOLID WASTE STANDARD PERMIT RENEWAL

PERTINENT STRATA CROSS-SECTION TO 1100 FEET

PREPARED BY: ST. JAMES PARISH

DATE: DECEMBER 15, 1993

C-K ASSOCIATES, INC.

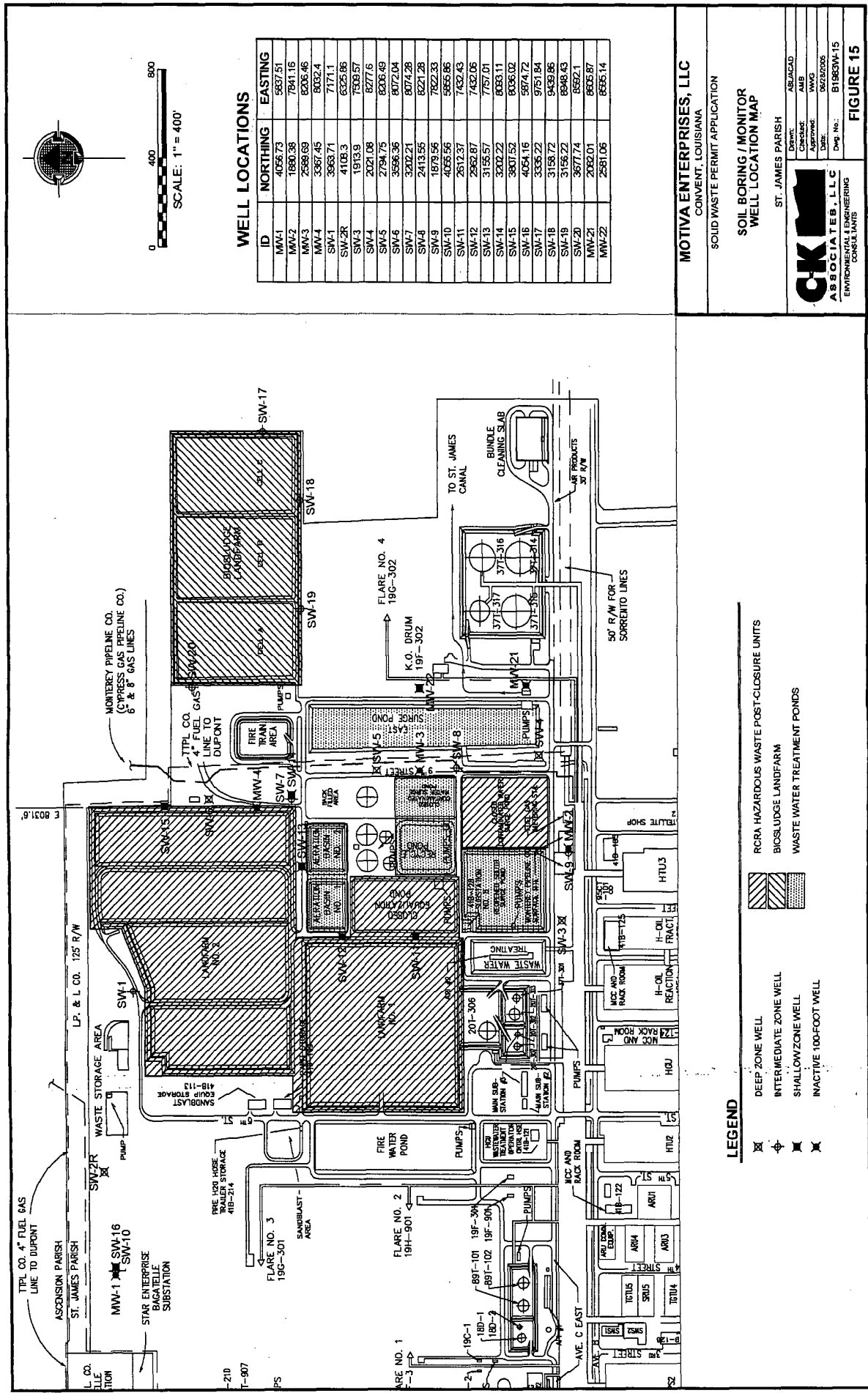
FILE NO. B57-313-14

NOTES:

1. DRAWING NOT TO SCALE
2. PLAN DATUM 89.0 FT. - 0.0 FT. MSL
3. REFERENCE TEXACO DRAWING AW-22-4223, DATED 3/10/80

FIGURE 15

SOIL BORING/MONITORING WELL LOCATION MAP



MOTIVA ENTERPRISES, LLC
CONVENT, LOUISIANA

SOLID WASTE PERMIT APPLICATION

SOIL BORING / MONITOR
WELL LOCATION MAP

ST. JAMES PARISH

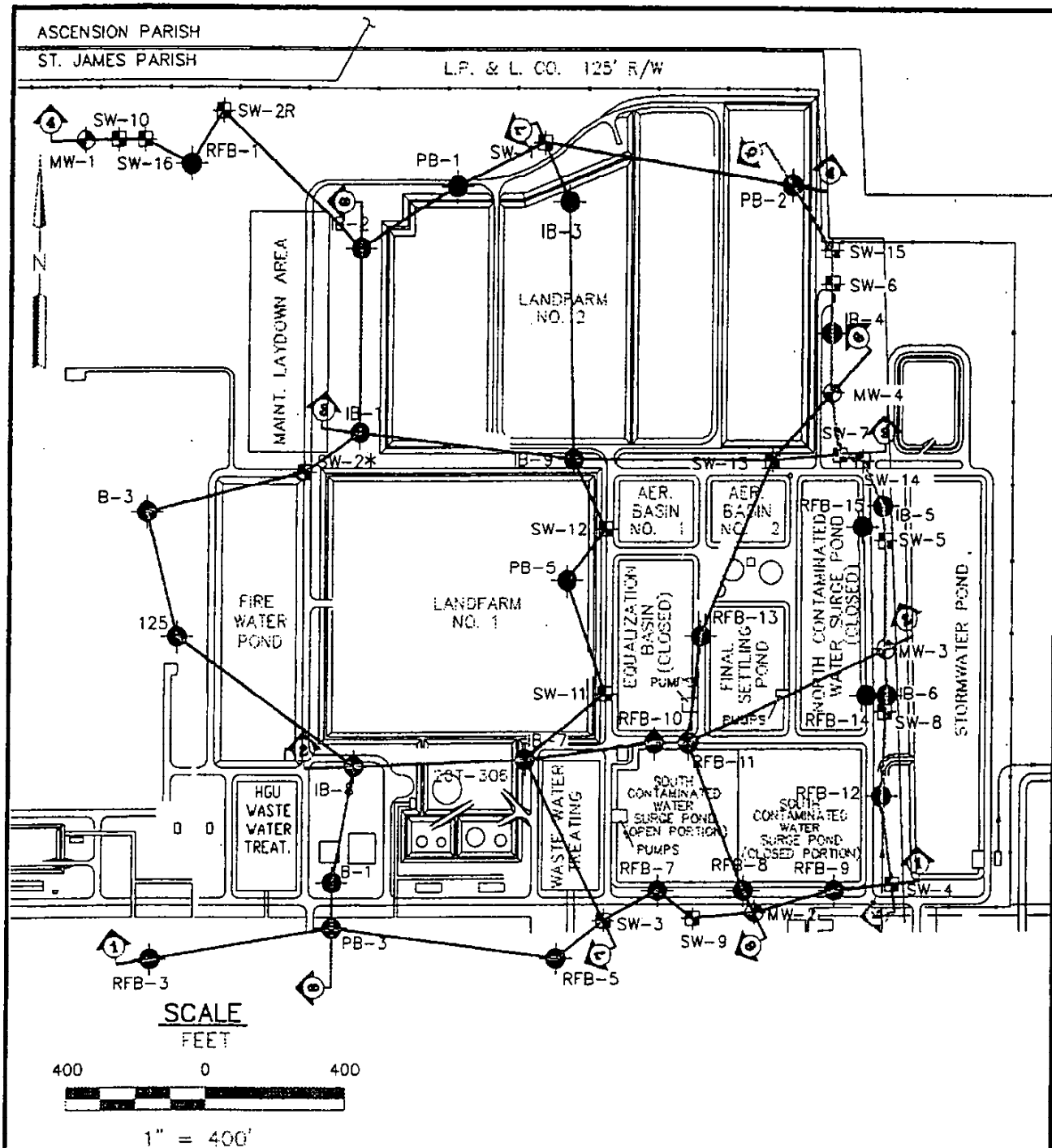


FIGURE 15

LEGEND

- RCRA HAZARDOUS WASTE POST-CLOSURE UNITS
- BIOSLUDGE LANDFARM
- WASTE WATER TREATMENT PONDS
- DEEP ZONE WELL
- INTERMEDIATE ZONE WELL
- SHALLOW ZONE WELL
- INACTIVE 100-FOOT WELL

FIGURE 16
GEOLOGICAL CROSS SECTIONS



NOTE:

1. BASE INFORMATION TAKEN FROM
C-K ASSOCIATES, INC. DRAWING
NO. A57-305-05

* PLUGGED AND ABANDONED

LEGEND:

- SW-3 SHALLOW MONITORING WELL
(UPPERMOST WATER-BEARING ZONE)
- MW-2 DEEP MONITORING WELL
- B-1 BORING LOCATIONS

MOTIVA ENTERPRISES LLC
CONVENT, LOUISIANA

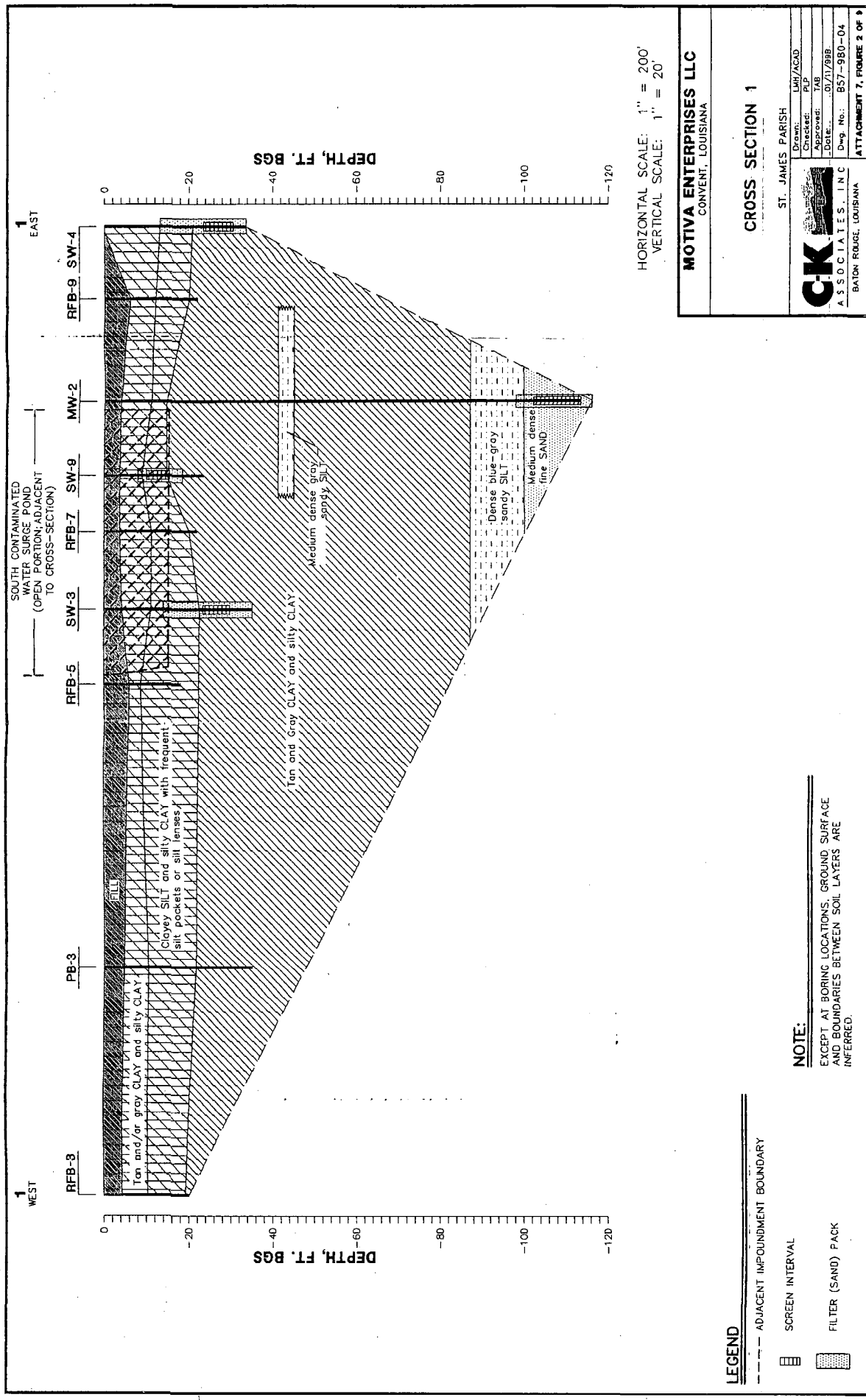
**CROSS-SECTION
LOCATION MAP**

ST. JAMES PARISH

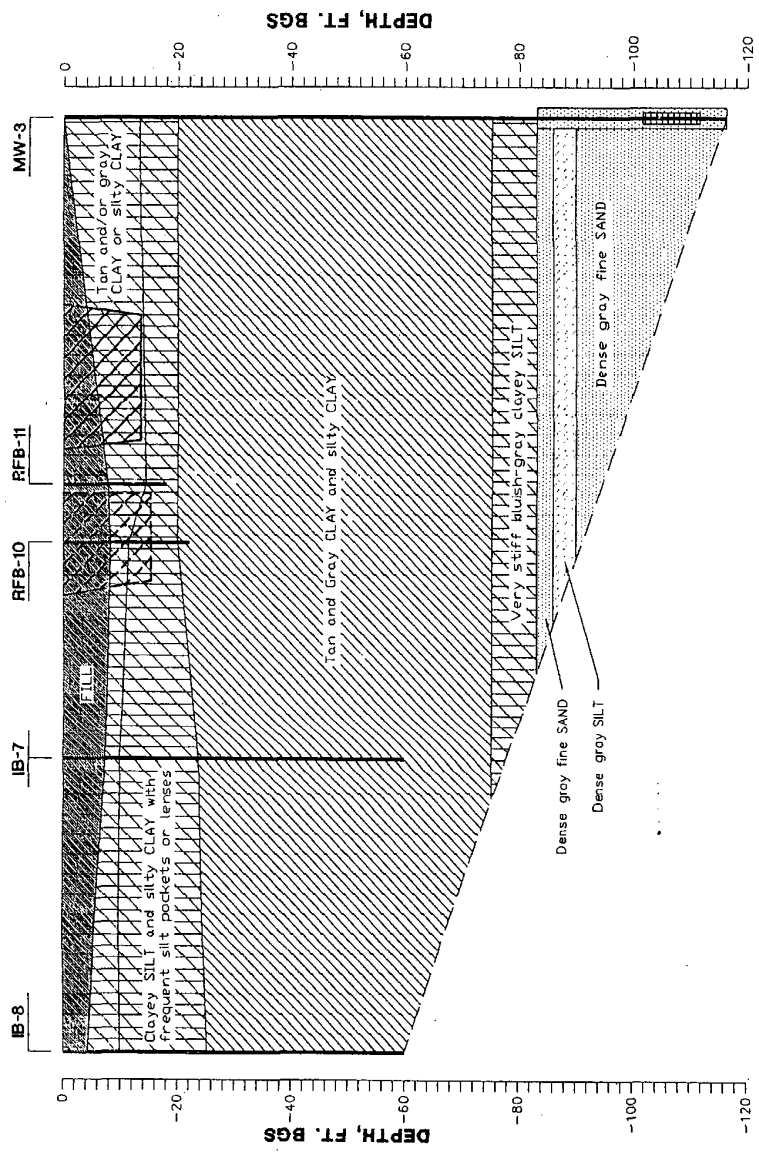
C-K
ASSOCIATES, INC.
BATON ROUGE, LOUISIANA

Drawn:	JRB/ACAD
Checked:	PLP
Approved:	PLP
Date:	01/14/98B
Dwg. No.:	A57-980-02

ATTACHMENT 7, FIGURE 1 OF 9



2 WEST
SOUTH CONTAMINATED
WATER SURGE POND
(OPEN PORTION; ADJACENT
TO CROSS-SECTION)
2 EAST
FINAL SETTLING
POND



LEGEND

- ADJACENT IMPOUNDMENT BOUNDARY
- IMPOUNDMENT BOUNDARY
- ▤ SCREEN INTERVAL
- ▨ FILTER (SAND) PACK

NOTE:

EXCEPT AT BORING LOCATIONS, GROUND SURFACE AND BOUNDARIES BETWEEN SOIL LAYERS ARE INFERRED.

HORIZONTAL SCALE: 1" = 200'
VERTICAL SCALE: 1" = 20'

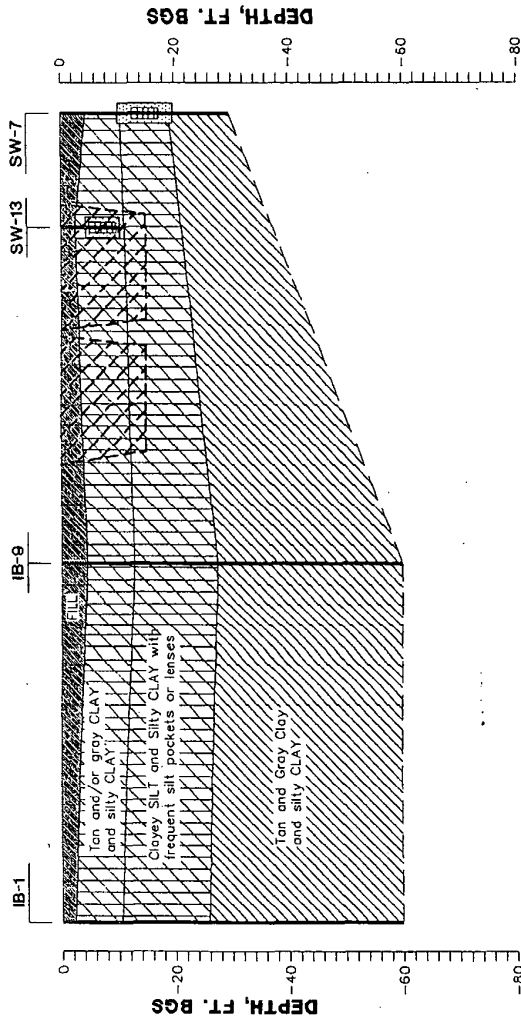
MOTIVA ENTERPRISES LLC CONVENT, LOUISIANA	
CROSS SECTION 2	
ST. JAMES PARISH	
Drawn: LHM/ACAD	Checked: PJP
Approved: TAB	Date: 07/06/98
Dwg. No.: B57-980-05	
Baton Rouge, Louisiana	
ATTACHMENT 7, FIGURE 3 OF 9	

AERATION BASIN
NO. 1
(ADJACENT TO
CROSS-SECTION)

AERATION BASIN
NO. 2
(ADJACENT TO
CROSS-SECTION)

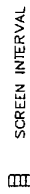
3
WEST

3
EAST

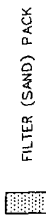


LEGEND

--- ADJACENT IMPOUNDMENT BOUNDARY



SCREEN INTERVAL



FILTER (SAND) PACK

NOTE:

EXCEPT AT BORING LOCATIONS, GROUND SURFACE AND BOUNDARIES BETWEEN SOIL LAYERS ARE INFERRED.

HORIZONTAL SCALE: 1" = 200'
VERTICAL SCALE: 1" = 20'

MOTIVA ENTERPRISES LLC
CONVENT, LOUISIANA

CROSS SECTION 3

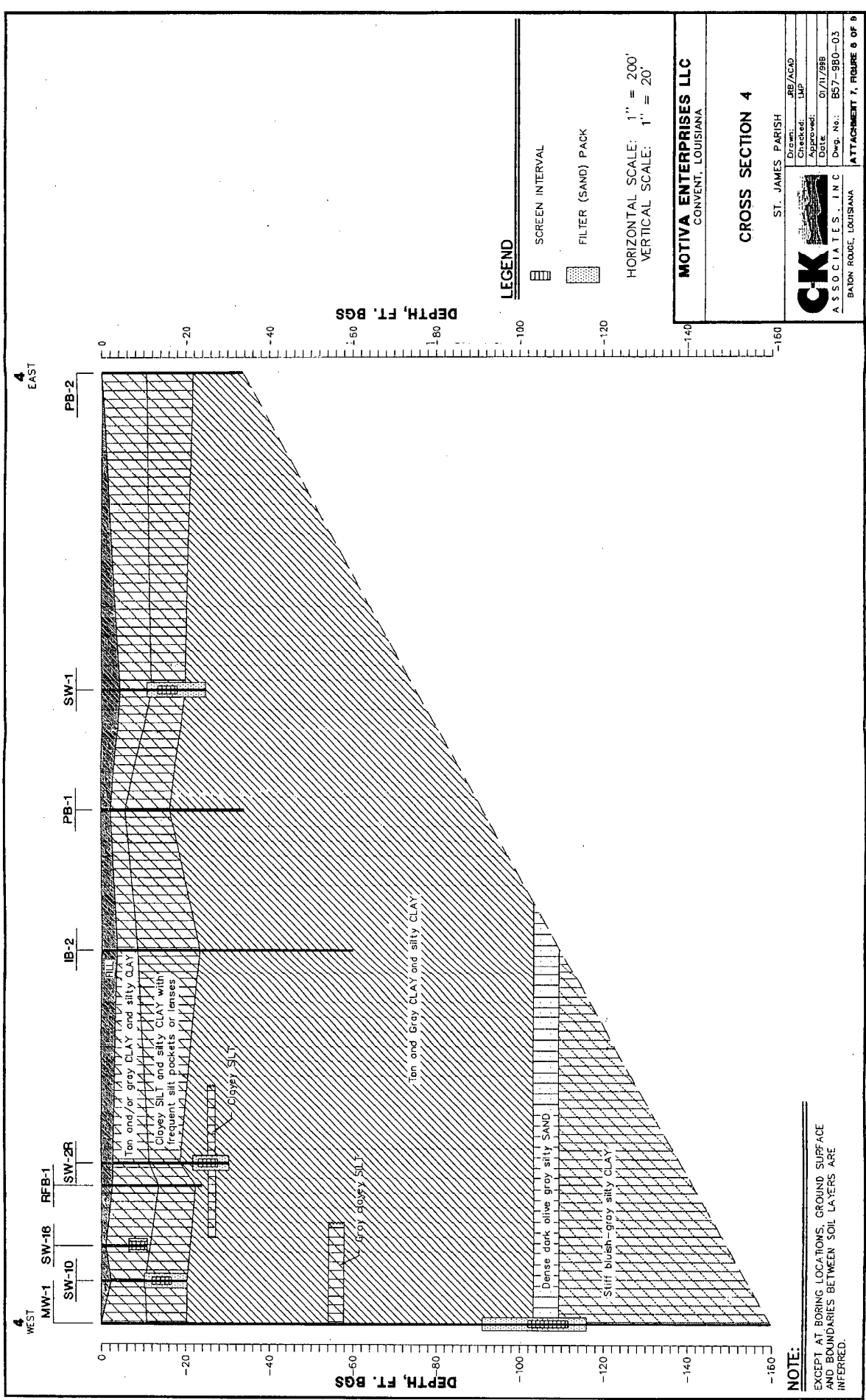
ST. JAMES PARISH



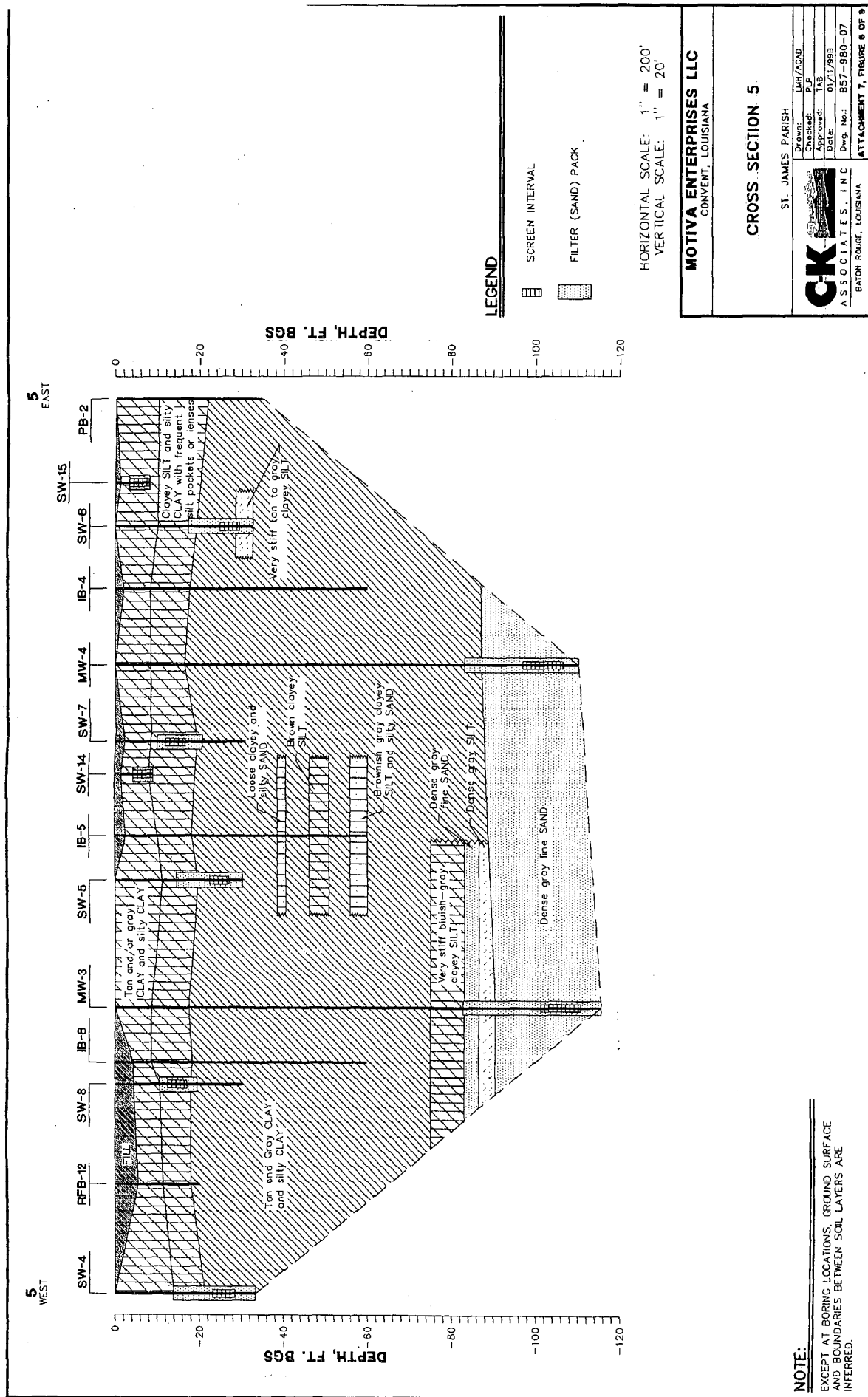
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ASSOCIATES, INC.
BATON ROUGE, LOUISIANA

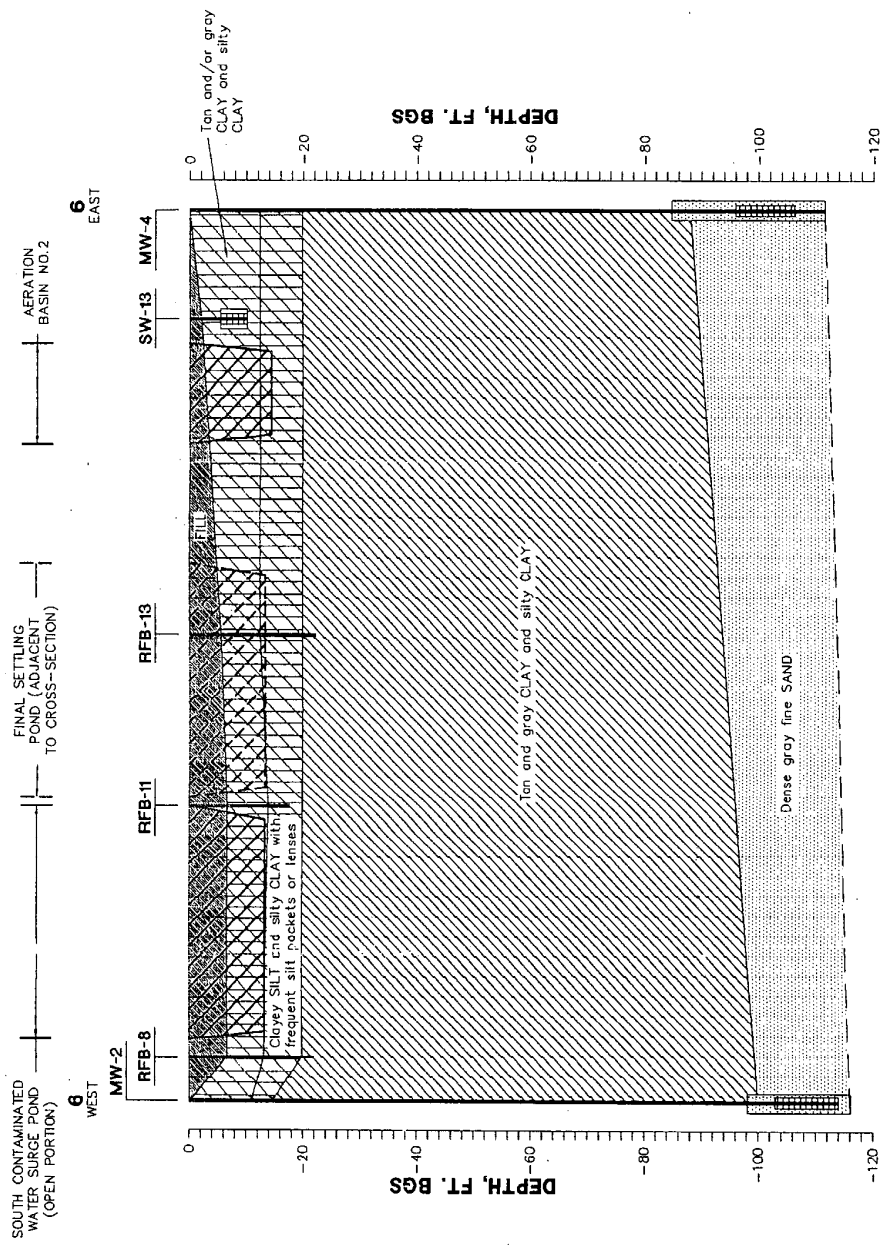
Drawn:	LMH/ACAD
Checked:	PLP
Approved:	TNS
Date:	07/06/99
Dwg. No.:	B57-980-06

ATTACHMENT 7, FIGURE 4 OF 9



NOTE:
EXCEPT AT BORING LOCATIONS, GROUND SURFACE
AND BOUNDARIES BETWEEN SOIL LAYERS ARE
INFERRED.





LEGEND

--- ADJACENT IMPOUNDMENT BOUNDARY

--- IMPOUNDMENT BOUNDARY

--- SCREEN INTERVAL

--- FILTER (SAND) PACK

NOTE:

EXCEPT AT BORING LOCATIONS, GROUND SURFACE AND BOUNDARIES BETWEEN SOIL LAYERS ARE INFERRED.

HORIZONTAL SCALE: 1" = 200'
VERTICAL SCALE: 1" = 20'

MOTIVA ENTERPRISES, L.L.C.
CONVENT, LOUISIANA

CROSS SECTION 6

ST. JAMES PARISH



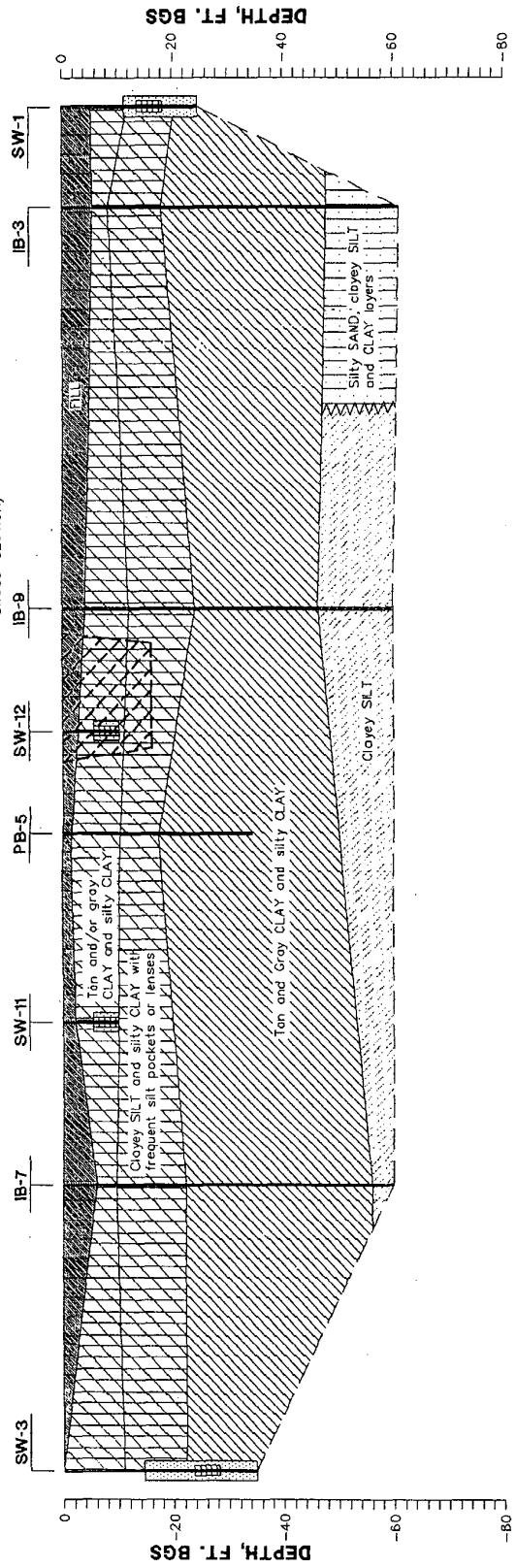
Drawn:	LMW/ACAD
Checked:	RB
Approved:	TAB
Date:	01/07/98B
Dwg. No.:	857-980-08

ATTACHMENT 7, FIGURE 7 OF 9

7
EAST

AERATION
BASIN NO. 1
(ADJACENT TO
CROSS-SECTION)

7
WEST



HORIZONTAL SCALE: 1" = 200'
VERTICAL SCALE: 1" = 20'

MOTIVA ENTERPRISES LLC
CONVENT, LOUISIANA

CROSS-SECTION 7

ST. JAMES PARISH



CK
ASSOCIATES, INC.
BATON ROUGE, LOUISIANA

Drawn:	LMH/ACAD
Checked:	PJP
Approved:	TAB
Date:	01/07/99
Dwg. No.:	B57-980-09

ATTACHMENT 7, FIGURE 8 OF 8

LEGEND

--- ADJACENT IMPOUNDMENT BOUNDARY

▬ SCREEN INTERVAL

▬ FILTER (SAND) PACK

NOTE:

EXCEPT AT BORING LOCATIONS, GROUND SURFACE
AND BOUNDARIES BETWEEN SOIL LAYERS ARE
INFERRED.

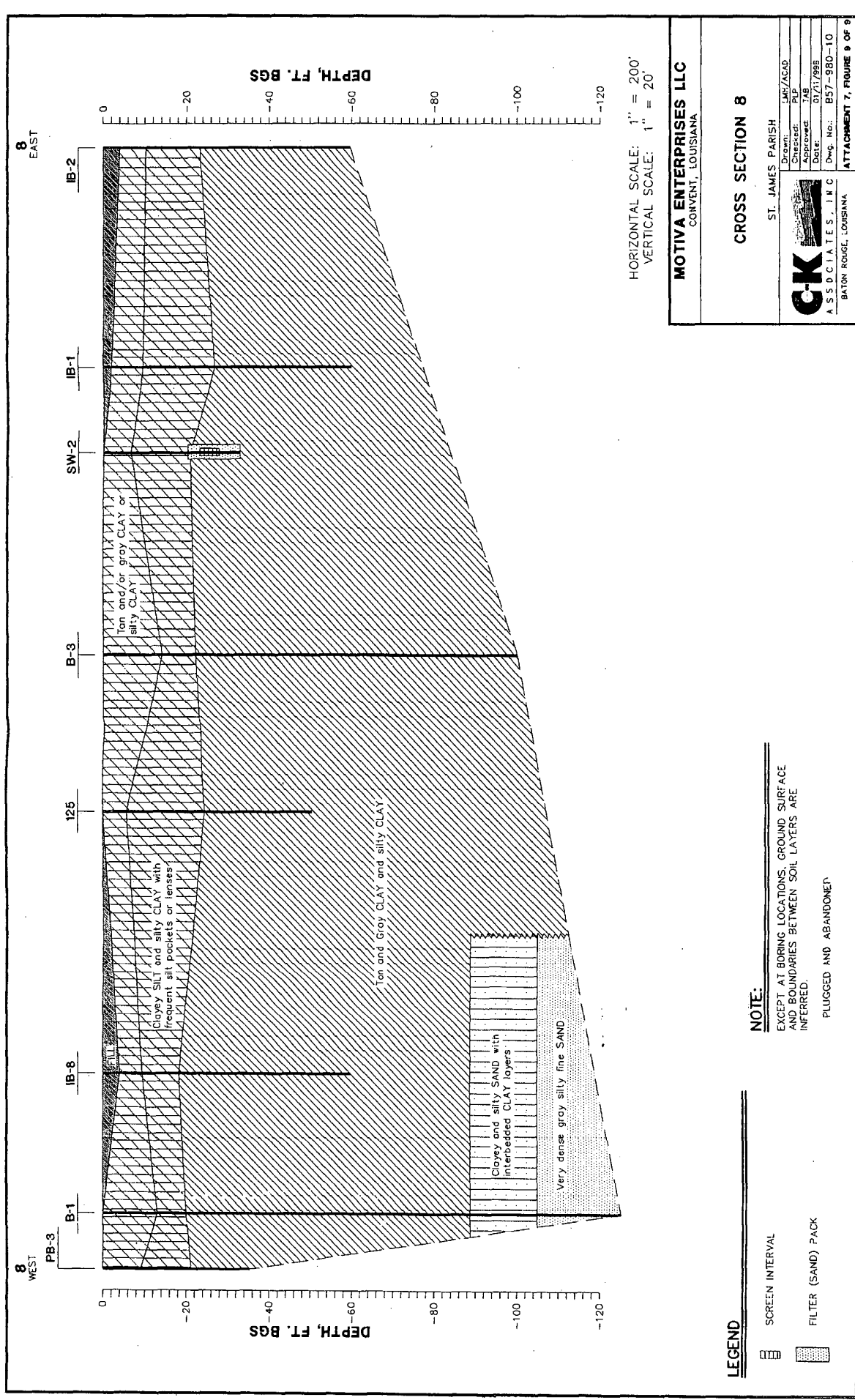


FIGURE 17
POTENTIOMETRIC MAP (SW-1 TO SW-6)

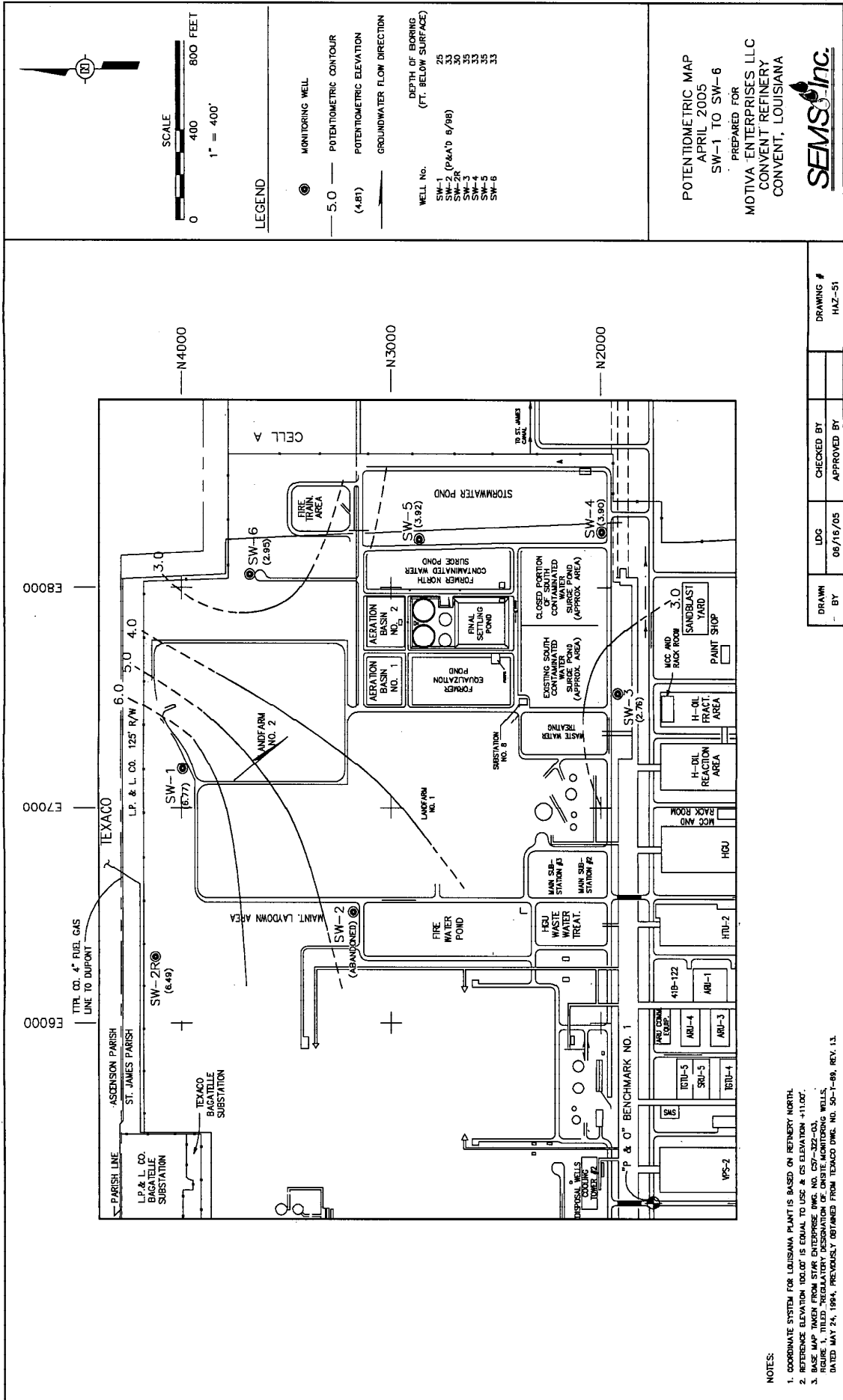
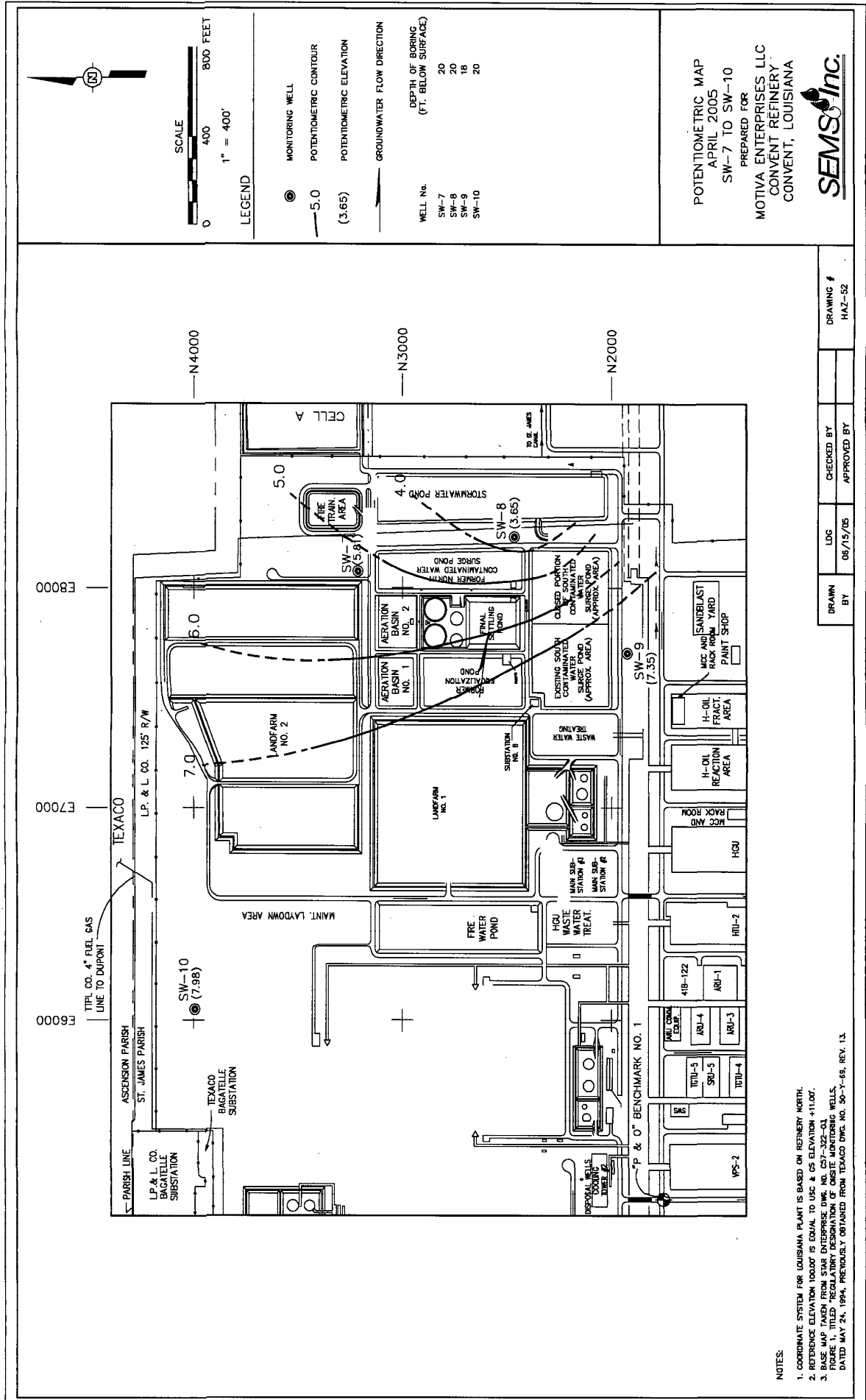


FIGURE 18
POTENTIOMETRIC MAP (SW-7 TO SW-10)



NOTES:

1. COORDINATE SYSTEM FOR LOUISIANA PLANT IS BASED ON RETINERY NORTH.
2. REFERENCE ELEVATION 100.00' IS EQUAL TO USC & GS ELEVATION +11.00'.
3. BASE MAP TAKEN FROM STAR ENTERPRISE Dwg. NO. C57-322-01.
4. FIGURE 1, TITLED "REGULATORY DESIGNATION OF ON-SITE MONITORING WELLS," DATED MAY 24, 1994, PREVIOUSLY OBTAINED FROM TEXACO Dwg. NO. 30-1-68, REV. 13.

DRAWN BY	LDG	CHECKED BY	DRAWING #
	06/15/05	APPROVED BY	HAZ-52

POTENTIOMETRIC MAP
APRIL 2005
SW-7 TO SW-10
PREPARED FOR
MOTIVA ENTERPRISES LLC
CONVENT REFINERY
CONVENT, LOUISIANA
SEMS Inc.

FIGURE 19
POTENTIOMETRIC MAP (SW-11 TO SW-16)

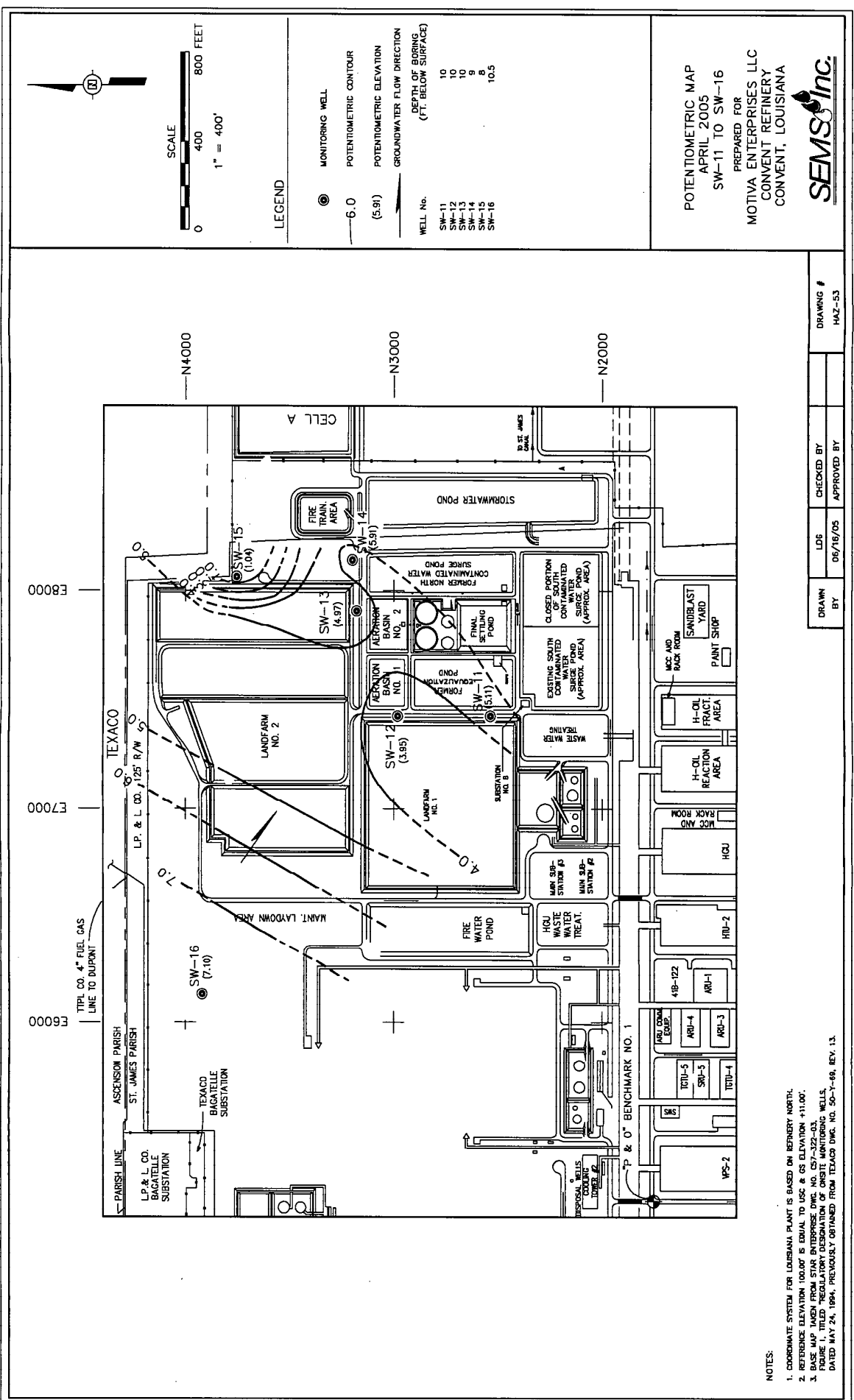


FIGURE 20

**UPPERMOST WATER BEARING ZONE
POTENTIOMETRIC MAP**

FIGURE 21

**TYPICAL CROSS SECTION FOR AERATION BASINS
1 AND 2**

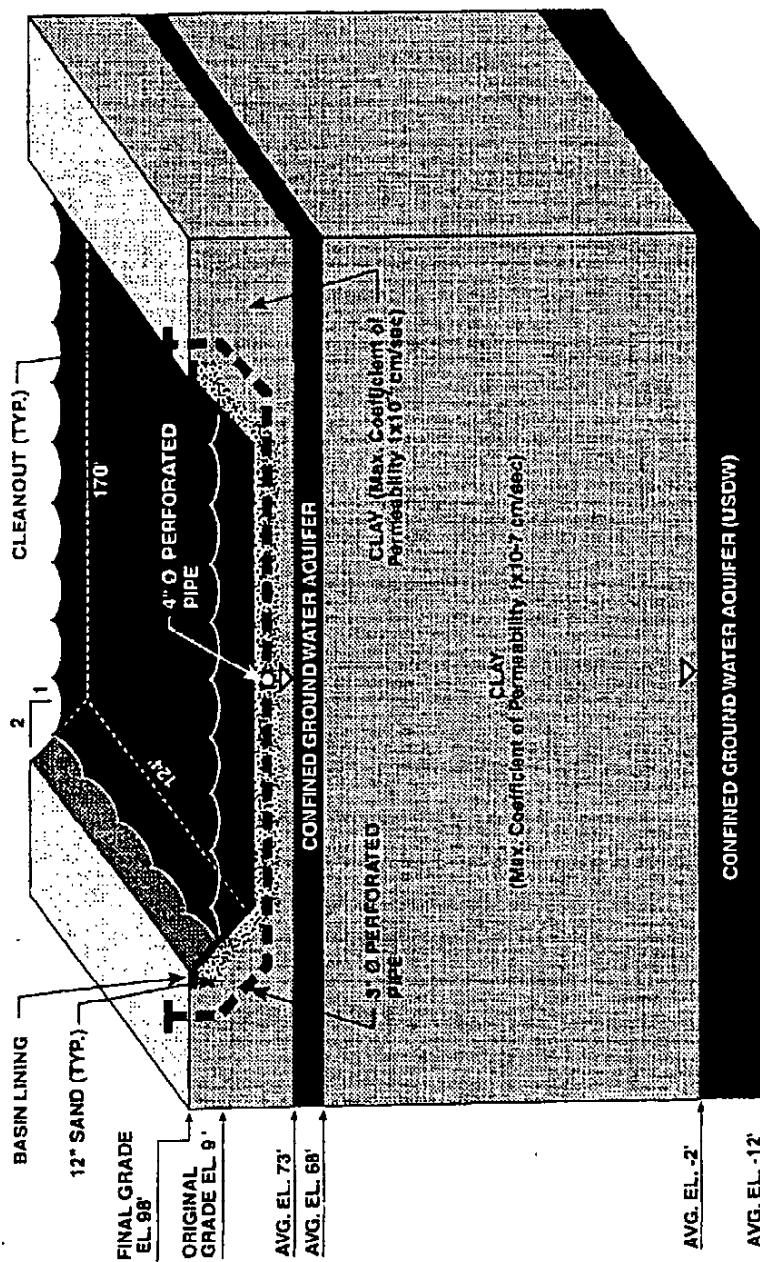


Figure 21

StarEnterprise
Louisiana Plant

SOLID WASTE STANDARD PERMIT RENEWAL

**TYPICAL CROSS SECTION FOR
AERATION BASINS 1 AND 2**

ASCENSION AND ST. JAMES PARISHES

PREPARED BY:
C-K ASSOCIATES, INC.

DATE: NOVEMBER 22, 1993

FILE NO. A57-313-02

NOTE:

1. DRAWING NOT TO SCALE
2. PLANT DATUM 89 FT. ± 0 FT. MSL

FIGURE 22
TYPICAL CROSS SECTION FOR SOUTH SURGE POND

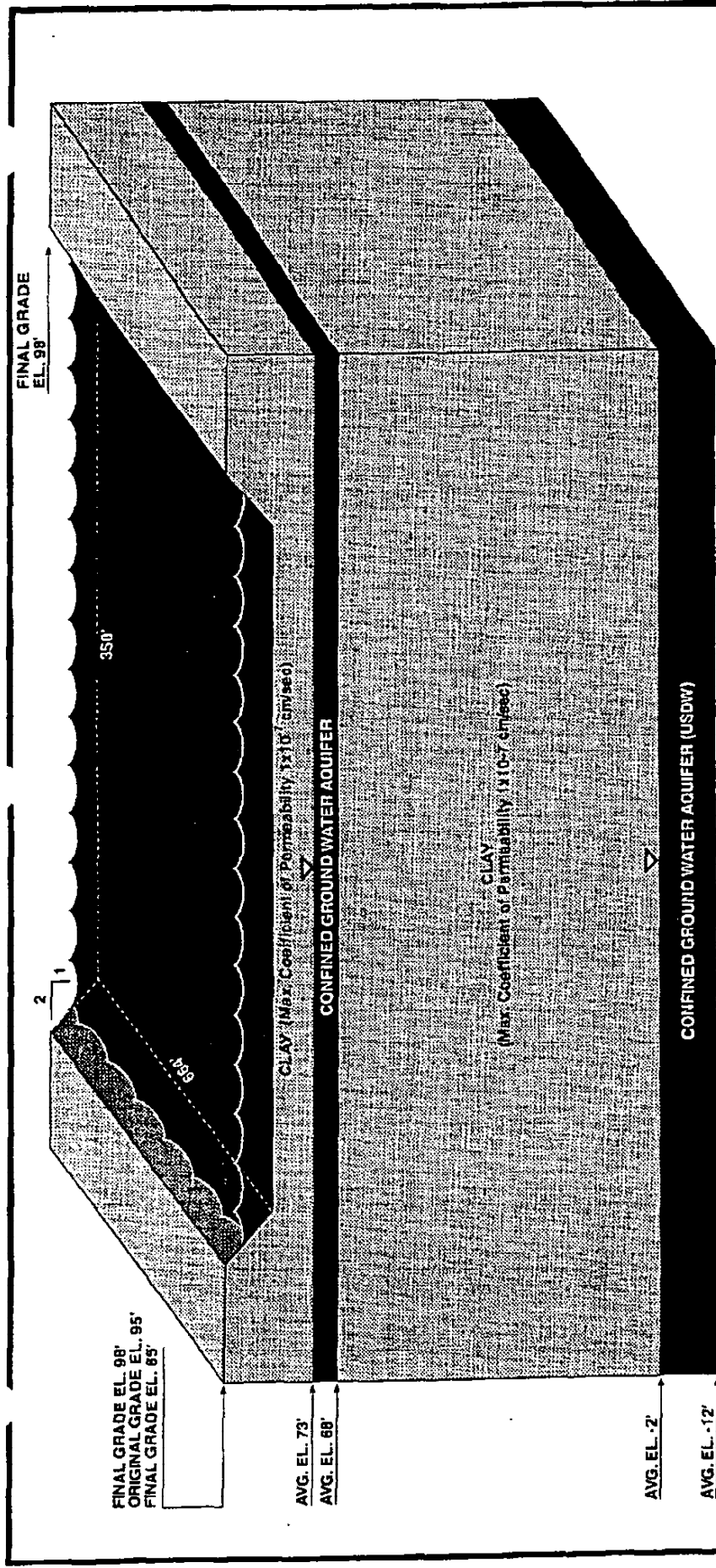



Figure 22



StarEnterprise
Louisiana Plant

SOLID WASTE STANDARD PERMIT RENEWAL

**TYPICAL CROSS SECTION FOR
SOUTH CONTAMINATED SURGE POND**

PREPARED BY:
C-K ASSOCIATES, INC.

ASCENSION AND ST. JAMES PARISHES
DATE: NOVEMBER 22, 1993
FILE NO. A57-313-03

NOTE:
1. DRAWING NOT TO SCALE
2. PLANT DATUM 89 FT. = 0 FT. MSL

FIGURE 23
TYPICAL CROSS SECTION FOR RECYCLE POND

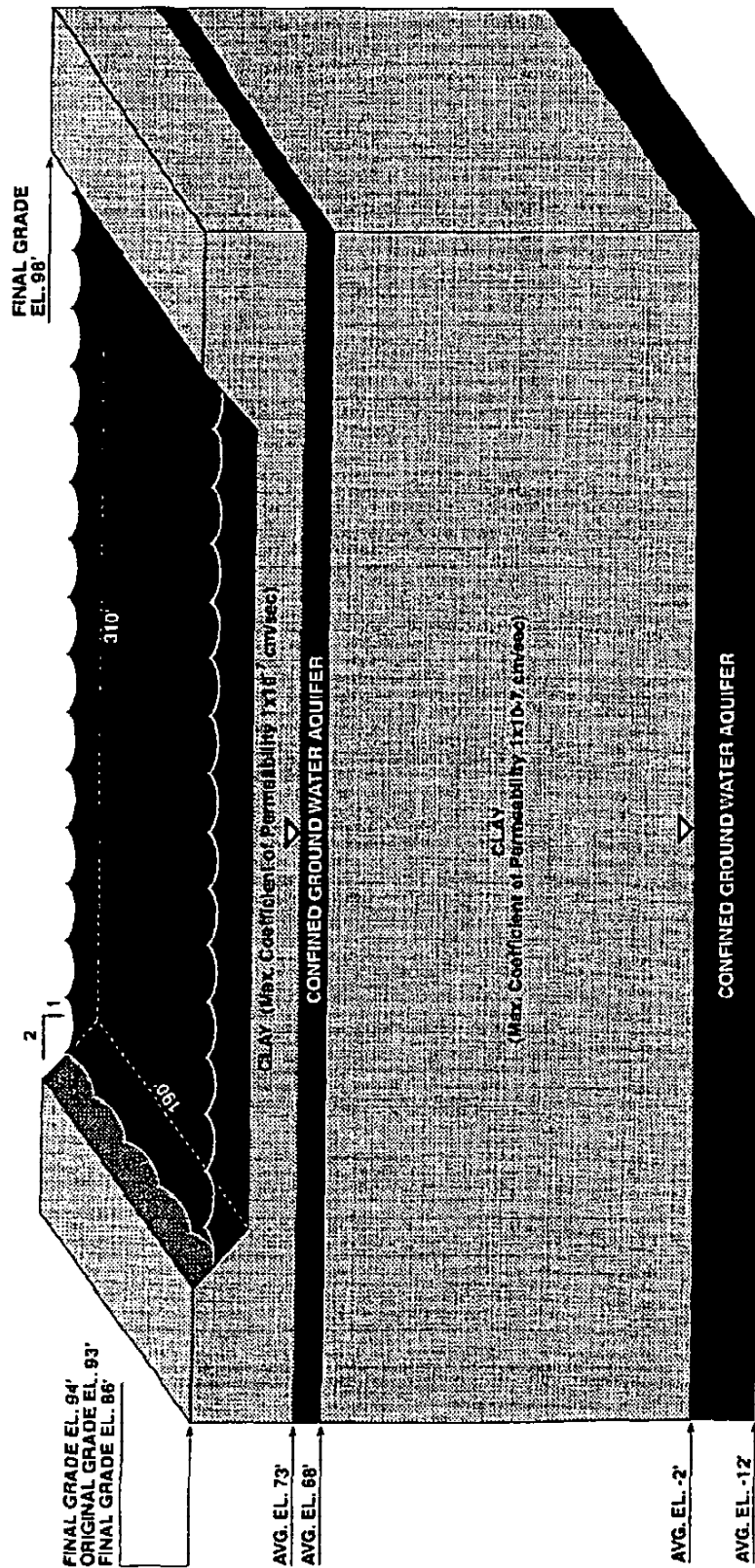


Figure 23

StarEnterprise
Louisiana Plant

SOLID WASTE STANDARD PERMIT RENEWAL

**TYPICAL CROSS SECTION FOR
FINAL SETTLING POND**

ASCENSION AND ST. JAMES PARISHES

PREPARED BY: **C-K** ASSOCIATES, INC.

DATE: NOVEMBER 22, 1993

FILE NO. A57-313-01

NOTE:

1. DRAWING NOT TO SCALE
2. PLANT DATUM 89 FT. ± 0 FT. MSL

FIGURE 24
POINTS OF COMPLIANCE

FIGURE 24

FIGURE 25

SIMPLIFIED BLOCK FLOW DIAGRAM
PLANT WATER BALANCE

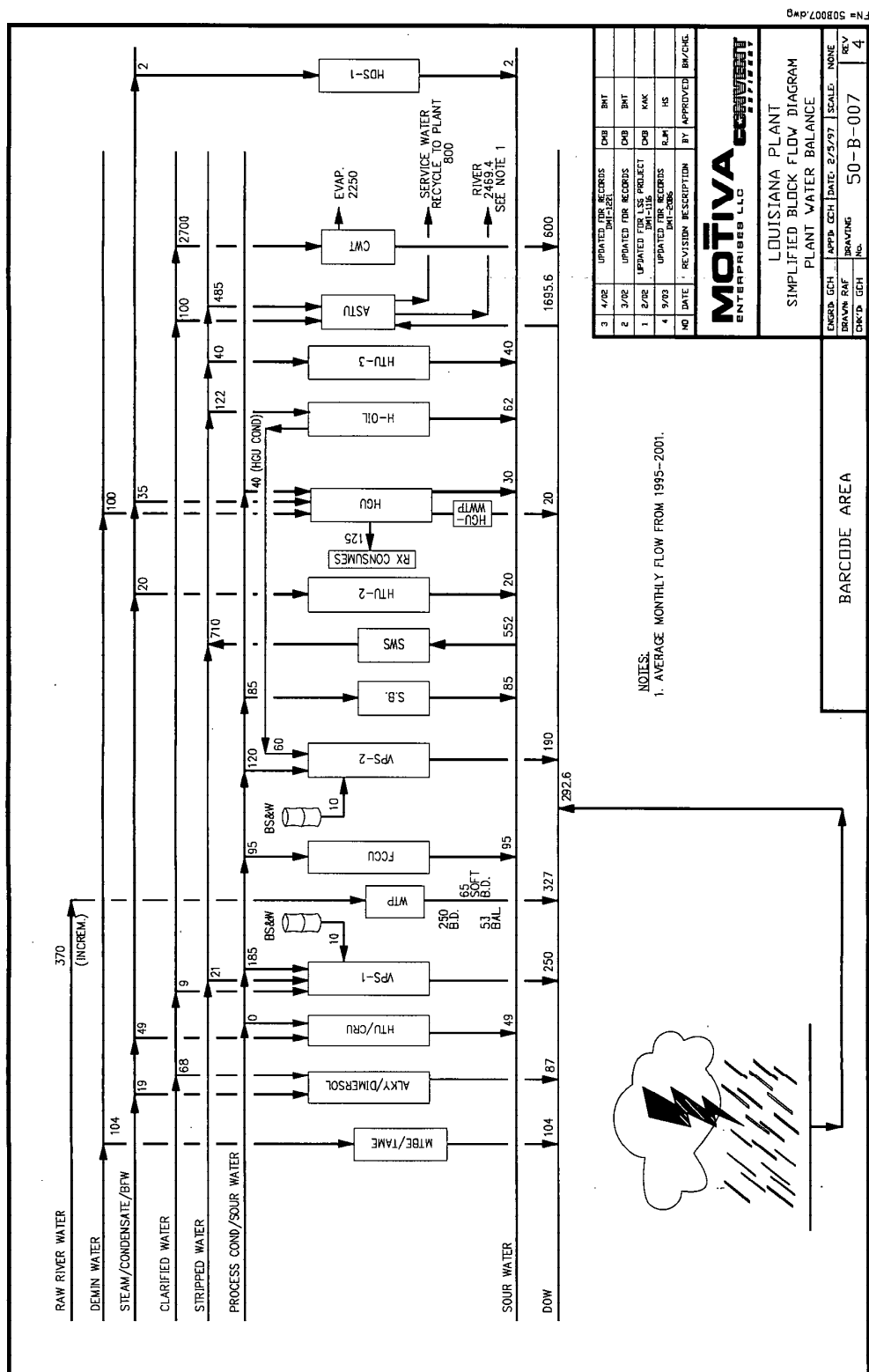
[illegible]

Figure 25

APPENDICES

APPENDIX A

LIST OF ENVIRONMENTAL PERMITS

**Motiva Enterprises LLC
Convent Refinery
Convent, Louisiana**

Existing Environmental Permits

Permit Number	Description
LA0006041	LPDES Permit
PSD-LA-378M-1	Federal Air PSD Permit
PSD-LA-420	Federal Air PSD Permit
PSD-LA-600	Federal Air PSD Permit
LAD 065 485 146-PC-1	RCRA Post Closure Permit
WP0406	LA State Water Discharge Permit
P-0246	LA State Solid Waste Permit (GD 093-1513)
P-0126	LA State Solid Waste Permit (GD 093-1513)
2395	LA State Air Permit (HGU WWTU Ammonia Flare)
2560-00001-07	LA State Consolidated Air Permit
2417	LA State Air Permit (Steam Boiler 31F-810)
2440	LA State Air Permit (LPG Loading Facility)
Submitted application	Title V Air Permit

APPENDIX B
ZONE DOCUMENTATION

Parish of St. James



P.O. Box 106
Convent, Louisiana 70723

Phone: (504) 562-2260
Fax: (504) 562-2279

Dale J. Hymel, Jr.
President

December 10, 1993

Mr. Chris Howard
C-K Associates, Inc.
17170 Perkins Road
Baton Rouge, Louisiana 70810

Re: Star Enterprise, Louisiana Plant
Solid Waste Standard Permit Modification

Dear Mr. Howard:

As per your request on the land-use and zoning requirements for the Star Enterprise, Louisiana Plant, located along LA Hwy. 70 in Union, La. please be advised that there are no zoning or land-use restrictions on said property. Therefore, please note that this industrial site is not subject to zoning requirements within St. James Parish at this time.

However, certain activities and/or improvements may require local Coastal Zone Management approval, and I suggest you forward a copy of your proposed activities to Mr. Jody Chenier of my office.

Should you have any questions or require further information, please do not hesitate to call.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Dale J. Hymel, Jr.", is written over a horizontal line.

Dale J. Hymel, Jr.
Parish President

DJH:jrl

APPENDIX C
PROOF OF PUBLIC NOTICE

BEST COPY

PUBLIC NOTICE

Notice is hereby given that Star Enterprise does intend to submit to the Department of Environmental Quality, Office of Solid and Hazardous Waste, Solid Waste Division, an application for a permit to operate a Type I Solid Waste Facility (Wastewater Treatment Solid Waste Surface Impoundments) in St. James Parish, Range 3E, Township 11S, Section 12, which is located on the east bank of the Mississippi River next to Sunshine Bridge, Convent, Louisiana.

Comments concerning the facility may be filed with the Secretary of the Louisiana Department of Environmental Quality at the following address:

Louisiana Department of
Environmental Quality
Office of Solid and
Hazardous Waste
Solid Waste Division
Permit Section

Post Office Box 82178
Baton Rouge, Louisiana 70884-2178

21708-dec 23-1t

CAPITAL CITY PRESS

Publisher of

THE ADVOCATE

PROOF OF PUBLICATION

The hereto attached notice was published in THE ADVOCATE, a daily newspaper of general circulation, published in Baton Rouge, Louisiana, and the Official Journal of the State of Louisiana, the City of Baton Rouge and the Parish of East Baton Rouge, in the issues of:

DECEMBER 23, 1993

Vicki Thompson
Advertising Representative

Sworn and subscribed before me by the person whose signature appears above in Baton Rouge, La. on this

23 day of DECEMBER 1993 AD.

[Signature]
Notary Public

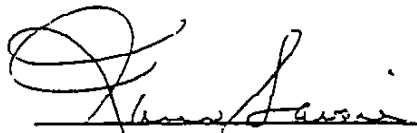
My Commission Expires:

Indefinite

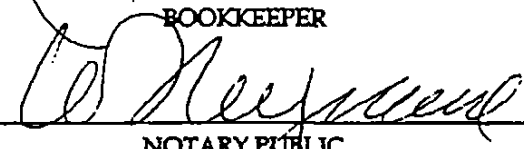
21708/421905
STAR ENTERPRISE

AFFIDAVIT OF PUBLICATION

I, Karen Savoie, as the bookkeeper of RUHR VALLEY PUBLISHING, INC., publisher of The Enterprise and The News-Examiner, certify that the attached legal notice was duly incorporated in the issue of The News-Examiner, St. James Parish newspaper(s) which was published at Litcher, Louisiana on the 23rd day(s) of December, 1993 and _____ day(s) of _____.



 BOOKKEEPER



 NOTARY PUBLIC

PUBLIC NOTICE

Notice is hereby given that Star Enterprise does intend to submit to the Department of Environmental Quality, Office of Solid and Hazardous Waste, Solid Waste Division, an application for a permit to operate a Type I Solid Waste Facility (Wastewater Treatment Solid Waste Surface Impoundments) in St. James Parish, Range 3E, Township 11S, Section 12, which is located on the east bank of the Mississippi River next to Sunshine Bridge, Convent, Louisiana.

Comments concerning the facility may be filed with the Secretary of the Louisiana Department of Environmental Quality at the following address:

Louisiana Department of Environmental Quality
 Office of Solid and Hazardous Waste
 Solid Waste Division
 Permit Section
 Post Office Box 82178
 Baton Rouge, Louisiana 70884-2178

APPENDIX D
DELEGATION OF AUTHORITY



December 9, 2004

CERTIFIED MAIL #7003-0500-0005-3545-2443
RETURN RECEIPT REQUESTED

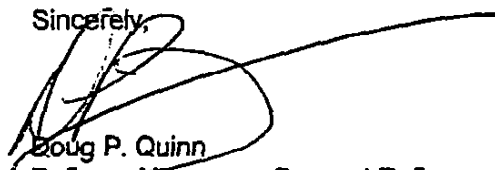
Mr. Michael Vince
Office of Environmental Services
Permits Division
Louisiana Department of Environmental Quality
P. O. Box 4313
Baton Rouge, LA 70821-4313

Dear Mr. Vince:

**SUBJECT: SIGNATURE AUTHORITY FOR ENVIRONMENTAL MATTERS
MOTIVA ENTERPRISES - CONVENT REFINERY
CONVENT, LOUISIANA
AGENCY INTEREST NUMBER 2719**

In accordance with the procedures outlined in LAC 33:IX.2503, Motiva Enterprises hereby submits a listing of the designated personnel who are authorized to sign various documents, applications and reports related to environmental matters at the Motiva Enterprises LLC - Convent Refinery. The levels of signature are presented in the attached memorandum. Please note that the signature authority are applicable to specific positions rather than to the persons occupying those positions.

Sincerely,



Doug P. Quinn
Refinery Manager - Convent Refinery

Attachment

December 9, 2004

FROM: Refinery Manager, Convent Refinery
TO: Convent Refinery Extended Leadership Team
SUBJECT: Signature Authority
Environmental Matters

This document outlines the scope of authority for signature of documents, applications and reports related to environmental matters and is pursuant to the authority delegated to me in my capacity as Refinery Manager of the Motiva Enterprises LLC Convent Refinery (Attachments A, B, and C). Authorities are applicable to specific positions (i.e., job titles) rather than to persons occupying these positions. As such, an employee duly appointed to occupy a position, either permanently or temporarily, may exercise these authorities, subject to any limitation expressed in the appointment. Authorities assigned to a position are limited to the jurisdictional boundaries of that position and may not be extended.

You are expected to conduct your business under these authorities in the best interest of the company. When exercising these authorities, prudent business judgement and strict compliance with the spirit and letter of this delegation is expected. In all cases, actions must be in compliance with the Company's policies and procedures and statutory requirements. In matters which require specialized expertise (e.g., Legal, Tax, Human Resources), you are expected to seek the counsel and advice of the appropriate parties.

Unless otherwise specified, signature shall be in your name and title.

The assignments granted herein are effective as of the date indicated below and shall continue in effect until revoked or superceded.

Dated as of: Dec. 09. 04


Doug Quinn
Refinery Manager, Convent Refinery

ATTACHMENT A

Environmental Matters Signature Authority Instructions

1. Attachment B contains specific reports with signature authority levels for Convent Refinery.
 2. In most cases, each report has several positions that have signature authority. The intent is for the position identified first to sign the report. If this position is offsite, the second and third positions also have signature authority.
 3. Except for the reports specifically assigned to the Refinery Manager, Convent Refinery, the Production Manager - COR, Technology Manager - COR, HSSE Manager, Environmental Manager - COR and the Refinery Manager, Convent Refinery all have signature authority for each report.
 4. For the reports specifically assigned to the Refinery Manager, Convent Refinery, the Refinery Manager, Convent Refinery must designate a position for signature authority in his/her absence.
 5. Attachment C is signature guidance and should only be used when a request is unlisted in Attachment B.
-

ATTACHMENT B

Convent Environmental List of Reports

Report Name	Short Description	Frequency	Delegated Signature Authority
CEMS Report	Report summarizing CEMS downtime and permit exceedences on all CEMS analyzers for past quarter.	Quarterly	Production Manager - COR Environmental Manager - COR HSSE Manager - COR Technology Manager - COR
NSPS Db, NNN, RRR Reports	Report for 810 boiler, FCCU gas turbine, and MTBE unit distillation and reactor vents. Submitted with CEMS quarterly report	Quarterly	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Title V specific condition report	Five Specific Conditions In the Title V permit require an annual emissions summary report	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
Title V Semi Annual Monitoring Certification	Report summarizing compliance exceptions discovered through required monitoring.	Semi-Annual	Refinery Manager, Convent Refinery
Title V Annual Compliance Certification Report	Report that summarizes compliance (continuous or intermittent) with each federally enforceable Title V permit condition	Annual	Refinery Manager, Convent Refinery
Title V Part 70 General Condition R Quarterly Deviation Report	Report covers permit deviations that do not require immediate agency notification	Quarterly	Production Manager - COR Environmental Manager - COR HSSE Manager - COR Technology Manager - COR
Title V Permit Modification Applications	Not necessary.	As Needed	Refinery Manager, Convent Refinery
Permit exemptions, pollution control project, and variance requests	Not necessary.	As Needed	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
Discharge Monitoring Report (DMR)	Report contains pH, flow, chemical amounts required to be reported under NPDES for Outfalls 001, 002 & 003, and must be certified by an authorized representative of the facility.	Monthly	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
DMR Studies	Per EPA requirements, annually the laboratories analyzing our NPDES permit required samples must run unknown samples. The analytical results are compared to the known values of the samples, and the lab's analytical accuracy verified. The initial submittal and certification of the NPDES testing program must be certified by an authorized representative of the facility. Submittal of NPDES sample test results and analysis of analytical capability	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
		As Needed	Water Engineer

ATTACHMENT B

Convent Environmental List of Reports

Report Name	Short Description	Frequency	Delegated Signature Authority
Water Pollution Control Fees	Annual fees imposed for discharge of contaminants into waters of the state.	Annual	Water Engineer
EIS Report	Annual Criteria Pollutant Actual Emissions Report	Annual	Refinery Manager, Convent Refinery
Consent Decree 30 day Release Report	This is for hydrocarbon, acid gas, or tall gas incidents that exceed the consent decree threshold	As Needed	Production Manager - COR Environmental Manager - COR HSSE Manager - COR Technology Manager - COR
Consent Decree Quarterly Report	Report summarizing progress of Consent Decree requirements and activities related to Consent Decree	Quarterly	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
Consent Decree Annual NOx Control Plan Update	Annual submittal stating changes or lack of changes to our NOx Control Plan	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
Consent Decree Required Documents	All notices, reports or any other submissions required of Motiva by the consent decree must be certified by a refinery manager or company official responsible for environmental management and compliance at the refinery.	Per Consent Decree Specified Due Dates	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
SARA 311 reports	Not necessary.	Quarterly	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
SARA 312 reports	Annual submittal reflecting hazardous materials and petroleum based products in storage at the refinery for the previous year.	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
SARA 313 reports (TRI)	Annual submittal reflecting toxic emissions from refinery for previous year.	Annual	Refinery Manager, Convent Refinery
NSPS Subpart QQQ Report	Submittal certifies control equipment was operated in compliance with regulations and lists any deviations from those requirements.	Semi-Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR Technology Manager - COR
Benzene Waste NESHAP Annual Report	Submittal includes Total Annual Benzene Quantity for the refinery for the previous year, and lists whether the benzene waste was controlled or uncontrolled.	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR

ATTACHMENT B

Convent Environmental List of Reports

Report Name	Short Description	Frequency	Delegated Signature Authority
Benzene Waste NESHAP Quarterly Report	Submittal certifies control equipment was inspected and operated in compliance with regulations and lists any deviations from those requirements.	Quarterly	Production Manager - COR Environmental Manager - COR HSSE Manager - COR Technology Manager - COR
SPCC Plan	Clean Water Act required plan which meets federal and state requirements for spill control of petroleum based products and hazardous materials. Requires management certification.	Initial with Updates as required	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
SWPPP Plan - Refinery	Clean Water Act required plan which meets federal and state requirements for prevention of contamination of storm water at the refinery.	Initial with Updates as required	Production Manager - COR
SWPPP Plan - Construction	This plan must be prepared and followed for any construction project over 1 acre in total area.	As Needed	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
Notice of Intent - Construction	Submittal required for any construction project over 1 acre in total area which disturbs surface of ground.	As Needed	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Notice of Termination - Construction	Submittal required at the conclusion of any construction project for which a NOI was submitted and approved by the LA DEQ. Submitted at the end of the project.	As Needed	Environmental Manager - COR HSSE Manager - COR
Sorrento Saltwater Disposal Well report	Report to DNR - lists volume and mechanical integrity of wells	Annual	Waste Engineer
TEDI report	Annual LA Toxics Pollutant Report	Annual	Refinery Manager, Convent Refinery
Semi-Annual Groundwater Statistical Report (RCRA Post Closure Permit LAD065485146)	This report fulfills our 7-day notification requirements whenever we have a statistical exceedence in our groundwater monitoring data. This report is prepared in accordance with Section VI.H.3 and VI.H.5 of our 1995 RCRA Post-Closure Permit, and is typically submitted in June and December each year.	Semi-Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Semi-Annual Interim Corrective Measures Report - Diesel Tank 20T-209	Semi-Annual Status Report documenting groundwater remediation activities at Diesel Tank 20T-209. This report is typically submitted in January and July each year.	Semi-Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Semi-Annual Groundwater Remediation Report - Alkylation Caustic Handling Area	Semi-Annual Status Report documenting groundwater remediation activities near the Alkylation Caustic Handling area. This report is typically submitted in January and July each year.	Semi-Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Annual Groundwater Monitoring Report (RCRA Post Closure Permit LAD065485146)	Annual Groundwater Report due March 1st each year as per Section VI.G.8 of the 1995 RCRA Post-Closure Permit. Includes Monitoring Wells SW-1 through SW-16.	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR

ATTACHMENT B

Convent Environmental List of Reports

Report Name	Short Description	Frequency	Delegated Signature Authority
Annual Groundwater Monitoring Report (Solid Waste Permit P-0126 which includes the active surface WWTP Surface Impoundments)	Annual Groundwater Monitoring Report Due 90 days after sampling as per LAC 33:VII.709.E.3.e. Includes Groundwater Monitoring Wells SW-1 through SW-10.	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Semi-Annual Biosludge Landfarm Report (Solid Waste Permit P-0246)	Semi-Annual Sampling/Analysis Report due 90 days after sampling as per LAC 33:VII.709.E.3.e. Includes Monitoring Wells SW-17 through SW-20	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Dock Operations Manual (Includes Letter of Intent and Certificates of Adequacy)	Dock Operations Manual prepared in accordance with 33 CFR 154.310. This manual is updated as amendments are necessary.	Periodic	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
Oil Spill Contingency Plan (Facility Response Plan)	Facility Response Plan (FRP) prepared in accordance with 33 CFR 154 and 40 CFR 112.20. The FRP is updated as necessary.	Periodic	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
Request for Letter of Alternative Compliance (LOAC)	Request for LOAC from the Captain of the Port under U.S. Coast Guard regulations. The LOAC allows us to deviate from specified regulations for the area covered by it.	As Needed	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
MACT Periodic Report	Periodic reports are required only if periods of excess emissions or compliance exceptions occur during the reporting period.	Semi-Annual	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
Emergency Release Follow-up Reports	7-Day reports following reportable events to further describe the incident, present emission estimates, and describe actions taken	As Needed (sometimes >1 per day)	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
Consent Decree Acid Gas or Hydrocarbon Flaring Report or TGTU Incident Report	Report of incident and emission calculation, results of root cause analysis, and proposed corrective actions due 30 days following a Acid Gas or Hydrocarbon Flaring event or TGTU incident (as defined in the Consent Decree)	As Needed	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
CERCLA/EPRA Continuous Release Report	Annual updates to this report (May be discontinued, following audit findings and future discussion.)	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Hazardous Waste Quarterly Tax Report	Report on Haz. Waste stored over 90 days or disposed of. Disposer actually pays taxes. Motiva's taxes are paid in disposal costs.	Quarterly	Environmental Manager - COR HSSE Manager - COR
Annual Hazardous Waste Report	All Hazardous Waste generated and disposed of during the year in a report.	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Annual Solid Waste Report	All Solid Waste disposed of for the Fiscal Year (June to June).	Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR

ATTACHMENT B

Convent Environmental List of Reports

Report Name	Short Description	Frequency	Delegated Signature Authority
OR-1 Form	Form sent to DNR for registration of Sorrento wells	Annual	Environmental Manager - COR HSSE Manager - COR
Hazardous Waste Generator Report	Annual report that lists types and quantity of wastes disposed of offsite	Annual	Environmental Manager - COR HSSE Manager - COR
P0126 Closure Cost Update Report	Report updates estimated closure costs for the closure of the aeration basins and south stormwater surge pond.	Annual	Environmental Manager - COR HSSE Manager - COR
P0246 Closure Cost Update Report	Report updates estimated closure costs for the closure of the biosludge landfill.	Annual	Environmental Manager - COR HSSE Manager - COR
LAD065485146 - LTU Report	Annual report describing the past year activities at the closed land treatment units.	Annual	Environmental Manager - COR HSSE Manager - COR
LAD065485146 - Financial Assurance Update	Annual report demonstrating the financial ability to clean close LTU areas in the event of a refinery shutdown.	Annual	Environmental Manager - COR HSSE Manager - COR
LAD065485146 - Closure Cost Update	Annual report updating the estimated clean closure costs for the LTU's.	Annual	Environmental Manager - COR HSSE Manager - COR
LAD065485146 - HW-1 Form Update	Form describing the types of waste activities that take place at Convent.	Annual and As Needed	Environmental Manager - COR HSSE Manager - COR
Standing Instruction Updates	Not necessary.	As Needed	Production Manager - COR
Waste Minimization Update	Summarizes last year's activities and sets goals for the following year.	Annual	Waste Engineer (P.E. Certification Required)
Solid Waste Generator Report	Describes and quantifies the types of non-hazardous wastes that are disposed of offsite.	Annual	Environmental Manager - COR HSSE Manager - COR
P0126 - Disposer Report	Describes and quantifies the types of non-hazardous wastes that are disposed onsite in the aeration basins and south stormwater surge pond.	Annual	Environmental Manager - COR HSSE Manager - COR
P0246 - Disposer Report	Describes and quantifies the types of biosludge that are disposed of on the biosludge landfill.	Annual	Environmental Manager - COR HSSE Manager - COR
Hazardous Waste Generator Fee	Cover sheet must be signed	Annual	Environmental Manager - COR HSSE Manager - COR
P0246 - Maintenance Fee	Cover sheet must be signed	Annual	Environmental Manager - COR HSSE Manager - COR
P0126 - Maintenance Fee	Cover sheet must be signed	Annual	Environmental Manager - COR HSSE Manager - COR
LAD065485146 - LTU Fees	Cover sheet must be signed	Annual	Environmental Manager - COR HSSE Manager - COR
Permit Application Renewals	Cover sheet must be signed	As Needed	Refinery Manager, Convent Refinery

ATTACHMENT B

Convent Environmental List of Reports

Report Name	Short Description	Frequency	Delegated Signature Authority
Environmental Incident Reports	Cover sheet must be signed	As Needed	Environmental Manager - COR HSSE Manager - COR Production Manager- COR
UST Registration Fee	Cover sheet must be signed	Annual	Environmental Manager - COR HSSE Manager - COR
Land Ban Forms	Not necessary.	As Needed	Environmental Manager - COR HSSE Manager - COR
Solid Non-Hazardous and Hazardous Waste Manifests	Not necessary.	As Needed	Any designated individual who has received attendant training
Tank Refill Notification	Letter Informing DEQ/EPA that a tank will not be refilled for at least 30 days in the event that a Subpart CC or Kb tank is emptied and degassed.	As Needed	Production Manager - COR Environmental Manager - COR HSSE Manager - COR
Subpart Kb or LAC 2103 notification of seal gaps or other specified deficiencies of tanks.	Tank deficiencies that must be reported within 30 days for Kb tanks and 7 days for LAC 2103 tanks.	As Needed	Environmental Manager - COR HSSE Manager - COR
Notification of seal gap measurement	Notify DEQ/EPA at least 30 days prior to any seal gap measurements.	Annual	Environmental Manager - COR HSSE Manager - COR
NSPS LDAR Report	Reports component monitoring and leak rate by process unit	Semi-annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Federal Refinery MACT	Reports component monitoring and leak rate by process unit	Semi-Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
Louisiana MACT Consolidated.	Reports component monitoring and leak rate by process unit	Semi-Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR
LAC:2121	Reports component monitoring and leak rate by process unit	Semi-Annual	Environmental Manager - COR HSSE Manager - COR Production Manager - COR

ATTACHMENT C

Signature Authority – Environmental Matters

Environmental Matters	Signature
1. Federal, state or local environmental permit application forms required by regulations such as those which apply to the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, etc.; returns and follow-up information related to formal requests or Notice of Deficiency related to permit applications	Refinery Manager, Convent Refinery
2. SPCC Plan, OPA Plan	Refinery Manager, Convent Refinery
3. Title V permit semi-annual monitoring report and annual compliance certification; non-routine reports attendant to the Title V permit such as breakdown reports, exceedance reporting and variance filings; annual reports for hazardous/solid waste	Refinery Manager, Convent Refinery
4. Routine reports attendant to the Title V permit such as monthly, quarterly or semi-annual activity and regulatory reports; routine reports for quarterly reporting of hazardous waste generator's onsite disposal report	Refinery Manager, Convent Refinery or in his/her absence: Environmental Manager ⁽¹⁾ or HSSE Manager ⁽¹⁾ or Production Manager ⁽¹⁾ or Technology Manager ⁽¹⁾
5. Title V permit deviation reports including unauthorized discharges to air pursuant to CERCLA, EPCRA or state reporting requirements	Refinery Manager, Convent Refinery or in his/her absence: Environmental Manager ⁽¹⁾ or HSSE Manager ⁽¹⁾ or Production Manager ⁽¹⁾ or Technology Manager ⁽¹⁾
6. Routine reports attendant to the NPDES permit	Environmental Manager ⁽²⁾ or HSSE Manager ⁽²⁾ or Refinery Manager, Convent Refinery
7. Non-routine requests from agencies	Environmental Manager or HSSE Manager or Refinery Manager, Convent Refinery
8. Transmittal accompanied by Position Statement or Request for Assistance or Transmittal of "Sensitive" Material	Environmental Manager or HSSE Manager or Refinery Manager, Convent Refinery
9. Written reports for unauthorized discharges to water or to land pursuant to CWA, CERCLA, EPCRA, or state reporting regulations	Environmental Manager or HSSE Manager or Report Writer
10. Agency routine activity reports, requests for information, letters, returns, follow-up correspondence, etc. as required by permits or regulations; informal requests for information or follow-up correspondence related to permit applications	Environmental Manager or HSSE Manager or Report Writer ⁽³⁾
11. Requests for information, letters, reports, returns, surveys/questionnaires, etc. from trade associations, affiliated companies, or other organizations	Environmental Manager or HSSE Manager or Report Writer ⁽³⁾
12. Manifests for shipping hazardous or solid wastes	Any designated individual who has received attendant training
13. Initial notifications, notification of compliance status reports or other non-routine reporting communication required by New Source Performance Standards (40 CFR 60) or National Emission Standards for Hazardous Pollutants (40 CFR 63)	Environmental Manager or HSSE Manager or Refinery Manager, Convent Refinery

- (1) For reports attendant to the Title V permit, authority to sign on behalf of the Refinery Manager, Convent Refinery is assigned to the positions so designated. In these cases, signature shall be as follows: The Assignee (actual name) for the Refinery Manager, Convent Refinery (actual name).

- (2) In accordance with the requirements specified at 40 CFR 122.22 and LAC 33:IX.2503, the positions so designated are delegated the authority to sign as a "duly authorized representative". A copy of this authorization must be submitted to the delegated authority which is the LDEQ.
 - (3) Unless otherwise noted, signatures shall be at the lowest possible level if, in the judgement of the individual, such a signature should be made at this level. Discretion should be utilized whenever the matter may be considered non-recurring, novel or precedent setting.
-

APPENDIX E

ENVIRONMENTALLY SENSITIVE AREAS LETTERS



MITCHELL J. LANDRIEU
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF ARCHAEOLOGY

ANGÈLE DAVIS
SECRETARY

PAM BREAU
ASSISTANT SECRETARY

October 28, 2004

Mr. Beau Mixon
Providence Engineering & Environmental Group, LLC
P.O. Box 84380
Baton Rouge, LA 70884-4380

Re: Biosludge Landform Solid Waste Permit Renewal Application
Project No. 042-007
Motiva Enterprise LLC, Convent Refinery
St. James Parish, Louisiana

Dear Mr. Mixon:

This is in response to your letter dated August 19, 2004, concerning the above-referenced permit. There are two known archaeological sites located within the area of potential effect of this project. However, based the nature of the permit, our office feels this project would create no adverse affect to either site. Therefore, we have no objections to this permit.

If we may be of further assistance, please contact Ms. Rachel Watson in the Division of Archaeology at (225) 342-8170.

Sincerely,


Pam Breau
State Historic Preservation Officer

PB:RW:s



State of Louisiana

KATHLEEN BABINEAUX BLANCO
GOVERNOR

DEPARTMENT OF WILDLIFE AND FISHERIES

DWIGHT LANDRENEAU
SECRETARY

Name Beau Mixon
Company Providence Engineering & Environmental Group
Street Address PO Box 84380
City, State, Zip Baton Rouge, LA 70884-4380
Project Motiva Enterprises LLC, Convent Refinery
Biosludge Landfarm Solid Waste Permit Renewal
St. James Parish, LA - PEEG Project No. 042-007
Date September 28, 2004
Invoice Number 04092804

Personnel of the Habitat Section of the Fur and Refuge Division have reviewed the preliminary data for the captioned project. Your project area is in the coastal zone. Contact the State of Louisiana Department of Natural Resources Coastal Management Division to determine if a coastal use permit is required. Our database indicates a 2003 observation of a bald eagle nest in the surrounding area. The bald eagle (*Haliaeetus leucocephalus*) is provided a threatened status on the federal species list and an endangered status on the state species list. However, we anticipate no impact from your facility on this species. In reviewing our database, no other rare, threatened, or endangered species or critical habitats were found within the areas of the captioned project that lie in Louisiana. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified sites within Louisiana's boundaries.

The Louisiana Natural Heritage Program has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The Louisiana Natural Heritage Program requires that this office be acknowledged in all reports as the source of all data provided here. If you have any questions or need additional information, please call Louisiana Natural Heritage Program Data Manager Jill Kelly at (225) 765-2643.

Sincerely,

Gary Lester, Coordinator
Natural Heritage Program



DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

November 3, 2006

Operations Division
Surveillance and Enforcement Section

Mr. Bill Greenwich
C-K Associates, Inc.
17170 Perkins Road
Baton Rouge, LA 70810

Dear Mr. Greenwich:

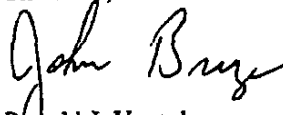
Reference is made to your request for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Section 12, Township 11 South, Range 3 East, St. James Parish, Louisiana (enclosed map). Specifically, this site is identified as area within 1000 feet of the Motiva Refinery solid waste facilities site.

Based on review of recent maps, aerial photography, soils data, and a previous determination we have determined that there are no jurisdictional wetlands within 1,000 feet of the subject site.

You are advised that this approved jurisdictional determination is valid until June 21, 2009 unless new information warrants revision prior to the expiration date.

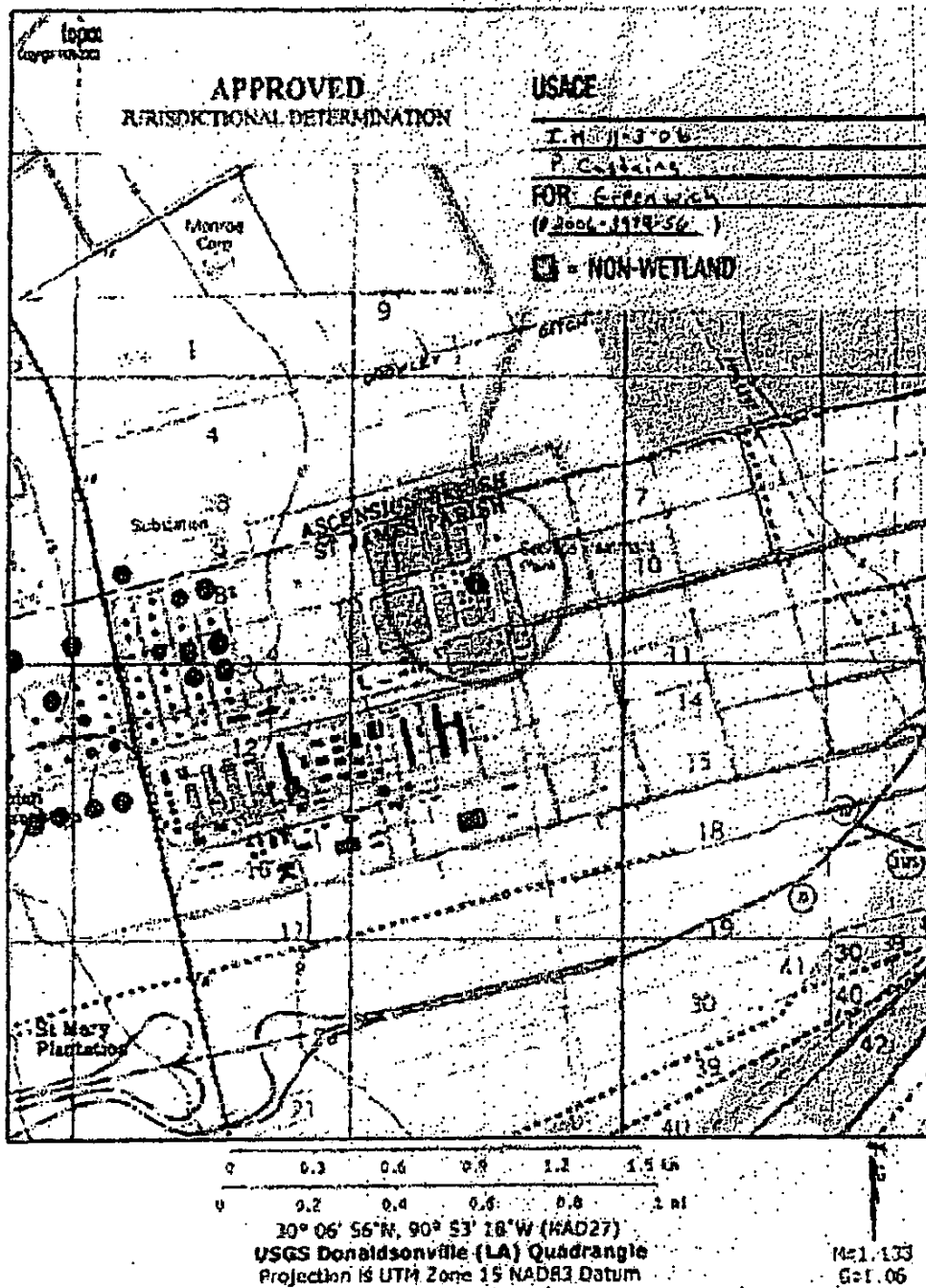
Should there be any questions concerning these matters, please contact Mr. Pierre Castaing at (504) 862-1726 and reference our Account No. MVN-2006-3979-SG.

Sincerely,


Ronald J. Ventola
Chief, Regulatory Branch

Enclosures

BEST COPY



JURISDICTIONAL DETERMINATION
U.S. Army Corps of Engineers

Revised 8/13/04

DISTRICT OFFICE: New Orleans
FILE NUMBER: MVN-2006-3979-SG

PROJECT LOCATION INFORMATION:

State: Louisiana
Parish: St. James
Center coordinates of site (latitude/longitude): NAD83 30.115090 N / -90.888237 W
Approximate size of area (parcel) reviewed, including uplands: acres.
Name of nearest waterway:
Name of watershed:

JURISDICTIONAL DETERMINATION

Completed: Desktop determination
Site visit(s)



Date: 11/03/2006

Date(s):

Jurisdictional Determination (JD):

☐ Preliminary JD - Based on available information, ☐ *there appear to be* (or) ☐ *there appear to be no* "waters of the United States" and/or "navigable waters of the United States" on the project site. A preliminary JD is not appealable (Reference 33 CFR part 331).

☒ Approved JD - An approved JD is an appealable action (Reference 33 CFR part 331).
Check all that apply:

☒ There are "navigable waters of the United States" (as defined by 33 CFR part 329 and associated guidance) within the reviewed area. Approximate size of jurisdictional area:

☒ There are "waters of the United States" (as defined by 33 CFR part 328 and associated guidance) within the reviewed area. Approximate size of jurisdictional area:

☒ There are "isolated, non-navigable, intra-state waters or wetlands" within the reviewed area.

☒ Decision supported by SWANCC/Migratory Bird Rule Information Sheet for Determination of No Jurisdiction.

BASIS OF JURISDICTIONAL DETERMINATION:

A. Waters defined under 33 CFR part 329 as "navigable waters of the United States":

☒ The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

B. Waters defined under 33 CFR part 328.3(a) as "waters of the United States":

☒ (1) The presence of waters, which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

☒ (2) The presence of interstate waters including interstate wetlands.

☒ (3) The presence of other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such waters (check all that apply):

☐ (i) which are or could be used by interstate or foreign travelers for recreational or other purposes.

☐ (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

☐ (iii) which are or could be used for industrial purposes by industries in interstate commerce.

☒ (4) Impoundments of waters otherwise defined as waters of the US.

☒ (5) The presence of a tributary to a water identified in (1) - (4) above.

☒ (6) The presence of territorial seas.

☒ (7) The presence of wetlands adjacent² to other waters of the US, except for those wetlands adjacent to other wetlands.

Rationale for the Basis of Jurisdictional Determination (applies to any boxes checked above).

Basis2

2

Lateral Extent of Jurisdiction: (Reference: 33 CFR parts 328 and 329)☒ **Ordinary High Water Mark indicated by:**

- ☐ clear, natural line impressed on the bank
- ☐ the presence of litter and debris
- ☐ changes in the character of soil
- ☐ destruction of terrestrial vegetation
- ☐ shelving
- ☐ other:

☒ **High Tide Line indicated by:**

- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gages
- ☐ other:

☒ **Mean High Water Mark indicated by:**

- ☐ survey to available datum; ☐ physical markings; ☐ vegetation lines/changes in vegetation types.

☒ **Wetland boundaries, as shown on the attached wetland delineation map and/or in a delineation report prepared by:****Basis For Not Asserting Jurisdiction:**☒ **The reviewed area consists entirely of uplands.**☒ **Unable to confirm the presence of waters in 33 CFR part 328(a)(1, 2, or 4-7).**☒ **Headquarters declined to approve jurisdiction on the basis of 33 CFR part 328.3(a)(3).**☒ **The Corps has made a case-specific determination that the following waters present on the site are not Waters of the United States:**

- ☐ Waste treatment systems, including treatment ponds or lagoons, pursuant to 33 CFR part 328.3.
- ☐ Artificially irrigated areas, which would revert to upland if the irrigation ceased.
- ☐ Artificial lakes and ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
- ☐ Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
- ☐ Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States found at 33 CFR 328.3(a).
- ☐ Isolated, intrastate wetland with no nexus to interstate commerce.
- ☐ Prior converted cropland, as determined by the Natural Resources Conservation Service. Explain rationale:
- ☐ Non-tidal drainage or irrigation ditches excavated on dry land. Explain rationale:
- ☐ Other (explain):

DATA REVIEWED FOR JURISDICTIONAL DETERMINATION (mark all that apply):☒ **Maps, plans, plots or plat submitted by or on behalf of the applicant.**☒ **Data sheets prepared/submitted by or on behalf of the applicant.**

- ☐ This office concurs with the delineation report, dated _____, prepared by (company):
- ☐ This office does not concur with the delineation report, dated _____, prepared by (company):

☒ **Data sheets prepared by the Corps.**☒ **Corps' navigable waters' studies:**☒ **U.S. Geological Survey Hydrologic Atlas:**☒ **U.S. Geological Survey 7.5 Minute Topographic maps:**☒ **U.S. Geological Survey 7.5 Minute Historic quadrangles:**☒ **U.S. Geological Survey 15 Minute Historic quadrangles:**☒ **USDA Natural Resources Conservation Service Soil Survey:**☒ **National wetlands inventory maps:**☒ **State/Local wetland inventory maps:**☒ **FEMA/FIRM maps (Map Name & Date):**☒ **100-year Floodplain Elevation is: (NGVD)**☒ **Aerial Photographs (Name & Date): 1995 IR, 1998 IR, 2004 IR**☒ **Other photographs (Date):**☒ **Advanced Identification Wetland maps:**☒ **Site visit/determination conducted on:**☒ **Applicable/supporting case law:**☒ **Other information (please specify): Previous JD 2004-1575-SK**

¹Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).

²The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Bill Greenwich	File No.: MVN-2006-3979-SG	Date: NOV 6 2006
Attached is:		See Section below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input checked="" type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I: The following defines your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://asacc.army.mil/mcfunctions/awc/cewoner/corpsregulations/33CERPartA.pdf>.

- A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.
- ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
 - OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.
- B: PROFFERED PERMIT:** You may accept or appeal the permit
- ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
 - APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.
- C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.
- D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.
- ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
 - APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.
- E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

(over)

SECTION II: REQUEST FOR APPEAL OR OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact:

John Bruza (504) 862-1288
Chief, Surveillance and Enforcement Section
U.S. Army Corps of Engineers
P.O. Box 60627
New Orleans, LA 70160

If you only have questions regarding the appeal process you may also contact the Division Engineer through:

Donna M. Jones, P.E.
U.S. Army Corps of Engineers Division,
Mississippi Valley
ATTN: CEMVD-PD-KM
Post Office Box 80
Vicksburg, Mississippi 39181-0080
Telephone: 601/634-5821. FAX: 601/634-5816

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.	Date:	Telephone number:
----------------------------------	-------	-------------------

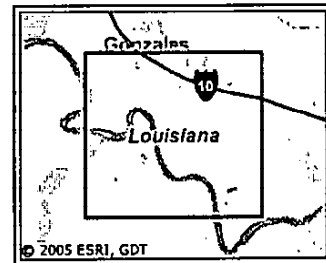
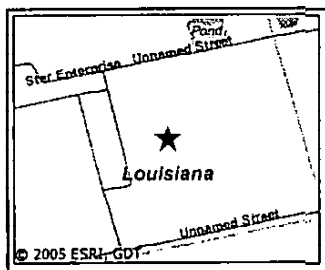
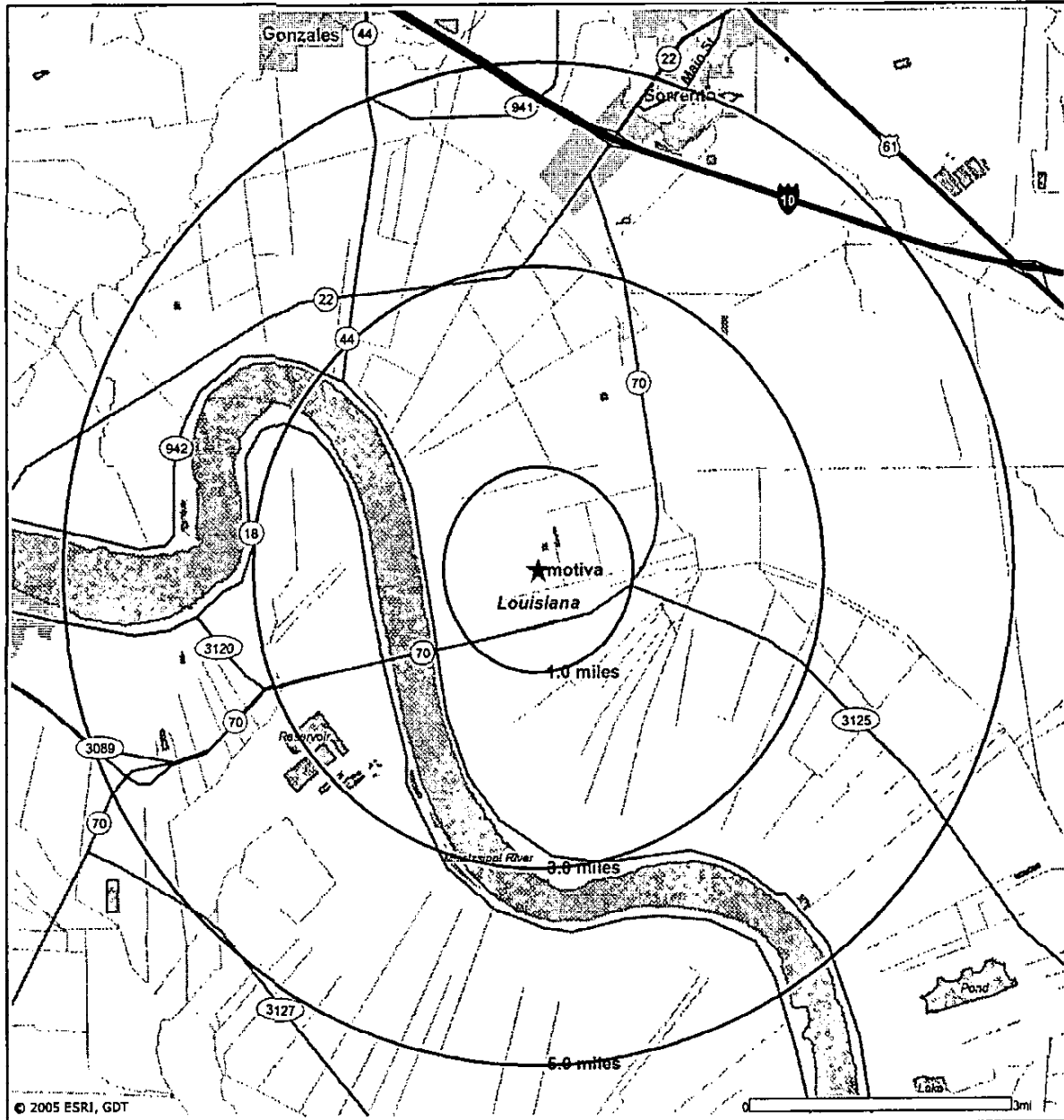
APPENDIX F
2000 CENSUS SUMMARY

motiva

Site Map

June 20, 2005

Latitude: 30.11
Longitude: -90.89





motiva

Census 2000 Summary Profile

Latitude: 30.11

Longitude: -90.89

Radius: 3.0 miles

Site Type: Radius

Summary	1990	Census 2000	1990-2000 Annual Rate
Total Population	2,285	2,074	-0.96%
Total Households	628	570	-0.96%
Total Families	490	447	-0.91%
Total Housing Units	701	676	-0.36%
Average Household Size	3.51	3.40	-0.32%
Average Family Size	4.09	3.94	-0.37%
Median Household Income	\$20,750	\$34,016	5.07%
Average Household Income	\$25,007	\$40,775	5.01%
Per Capita Income	\$7,629	\$12,363	4.95%

	Number	Percent
Population by Race		
Total	2,074	100.0%
Population Reporting One Race	2,063	99.5%
White	564	27.2%
Black or African American	1,492	71.9%
American Indian or Alaska Native	2	0.1%
Asian	0	0.0%
Native Hawaiian or Other Pacific Islander	0	0.0%
Some Other Race	5	0.2%
Population Reporting Two or More Races	11	0.5%
Total Hispanic Population	8	0.4%
Population by Sex		
Male	1,040	50.1%
Female	1,034	49.9%
Population by Age		
Total	2,076	100.0%
Age 0 - 4	139	6.7%
Age 5 - 9	178	8.6%
Age 10 - 14	197	9.5%
Age 15 - 19	199	9.6%
Age 20 - 24	169	8.1%
Age 25 - 29	130	6.3%
Age 30 - 34	145	7.0%
Age 35 - 39	149	7.2%
Age 40 - 44	143	6.9%
Age 45 - 49	146	7.0%
Age 50 - 54	137	6.6%
Age 55 - 59	96	4.6%
Age 60 - 64	62	3.0%
Age 65 - 69	64	3.1%
Age 70 - 74	42	2.0%
Age 75 - 79	54	2.6%
Age 80 - 84	13	0.6%
Age 85+	13	0.6%
Median Age	30.9	
Age 18+	1,438	69.3%
Age 65+	186	9.0%

Data Note: Population Reporting Two or More Races includes unique counts of the population who reported at least two races. Hispanic population can be of any race. Detail may not sum to totals due to rounding. Census 2000 medians are computed from reported data distributions. The "1990-2000 Annual Rate" is an annual compound rate.

Source: U.S. Census Bureau, Census 2000 Summary File 1 and 3. ESRI converted 1990 Census into 2000 geography.



motiva

Census 2000 Summary Profile

Latitude: 30.11

Longitude: -90.89

Site Type: Radius

Radius: 3.0 miles

	Number	Percent
Population by Relationship and HH Type		
Total	2,074	100.0%
In Households	1,937	93.4%
In Family Households	1,788	86.2%
Householder	487	23.5%
Spouse	275	13.3%
Child	719	34.7%
Other Relatives	279	13.5%
Nonrelatives	28	1.4%
In Nonfamily Households	149	7.2%
In Group Quarters	137	6.6%
Institutionalized Population	137	6.6%
Noninstitutionalized Population	0	0.0%
Population by Place of Birth and Citizenship Status		
Total	2,194	100.0%
Native	2,179	99.3%
Born in United States	2,179	99.3%
Born outside United States	0	0.0%
Foreign Born	15	0.7%
Naturalized Citizen	10	0.5%
Not a Citizen	5	0.2%
Population 15+ by Sex and Marital Status		
Total	1,586	100.0%
Females	773	48.7%
Never Married	248	15.6%
Married, not Separated	335	21.1%
Married, Separated	35	2.2%
Widowed	77	4.9%
Divorced	78	4.9%
Males	813	51.3%
Never Married	284	17.9%
Married, not Separated	372	23.5%
Married, Separated	29	1.8%
Widowed	25	1.6%
Divorced	103	6.5%
Population 3+ by School Enrollment		
Total	2,097	100.0%
Enrolled in Nursery/Preschool: Public School	46	2.2%
Enrolled in Nursery/Preschool: Private School	6	0.3%
Enrolled in Kindergarten: Public School	29	1.4%
Enrolled in Kindergarten: Private School	0	0.0%
Enrolled in Grade 1-8: Public School	345	16.5%
Enrolled in Grade 1-8: Private School	42	2.0%
Enrolled in Grade 9-12: Public School	149	7.1%
Enrolled in Grade 9-12: Private School	8	0.4%
Enrolled in College: Public School	35	1.7%
Enrolled in College: Private School	12	0.6%
Enrolled in Grad/Professional School: Public	1	0.0%
Enrolled in Grad/Professional School: Private	10	0.5%
Not Enrolled in School	1,414	67.4%

Source: U.S. Census Bureau, Census 2000 Summary File 1 and 3.



motiva

Census 2000 Summary Profile

Latitude: 30.11
 Longitude: -90.89
 Radius: 3.0 miles

Site Type: Radius

	Number	Percent
Population 25+ by Educational Attainment		
Total	1,247	100.0%
Less than 9th Grade	134	10.7%
9th - 12th Grade, No Diploma	243	19.5%
High School Graduate	523	41.9%
Some College, No Degree	237	19.0%
Associate Degree	23	1.8%
Bachelor's Degree	72	5.8%
Master's/Professional/Doctorate Degree	15	1.2%
Population 16+ by Sex and Employment Status		
Total	1,532	100.0%
Females in Labor Force	392	25.6%
Civilian Employed	317	20.7%
Civilian Unemployed	75	4.9%
In Armed Forces	0	0.0%
Females not in Labor Force	350	22.8%
Males in Labor Force	431	28.1%
Civilian Employed	384	25.1%
Civilian Unemployed	47	3.1%
In Armed Forces	0	0.0%
Males not in Labor Force	359	23.4%
Population 16+ by Sex and Work Status in 1999		
Total	1,532	100.0%
Females	742	48.4%
Worked Full-time	167	10.9%
Worked Part-time	235	15.3%
Did Not Work	340	22.2%
Males	790	51.6%
Worked Full-time	281	18.3%
Worked Part-time	277	18.1%
Did Not Work	232	15.1%
Females 16+ by Employment Status and Age of Children		
Total	743	100.0%
Own Children <6 Only	24	3.2%
Employed/in Armed Forces	16	2.2%
Unemployed	6	0.8%
Not in Labor Force	2	0.3%
Own Children 6-17 Only	186	25.0%
Employed/in Armed Forces	100	13.5%
Unemployed	20	2.7%
Not in Labor Force	66	8.9%
Own Children <6 and 6-17	66	8.9%
Employed/in Armed Forces	25	3.4%
Unemployed	18	2.4%
Not in Labor Force	23	3.1%
No Own Children <18	467	62.9%
Employed/in Armed Forces	176	23.7%
Unemployed	32	4.3%
Not in Labor Force	259	34.9%

Source: U.S. Census Bureau, Census 2000 Summary File 3.



motiva

Census 2000 Summary Profile

Latitude: 30.11

Longitude: -90.89

Site Type: Radius

Radius: 3.0 miles

	Number	Percent
Civilian Employed Population 16+ by Occupation		
Total	702	100.0%
Management/Professional	110	15.7%
Service	131	18.7%
Sales/Office and Admin Support	174	24.8%
Farming/Fishing/Forestry	2	0.3%
Construction/Extraction/Maintenance	67	9.5%
Production/Transportation/Material Moving	218	31.1%
Civilian Employed Population 16+ by Industry		
Total	704	100.0%
Agriculture/Forestry/Fishing/Hunting/Mining	5	0.7%
Construction	72	10.2%
Manufacturing	101	14.3%
Wholesale Trade	23	3.3%
Retail Trade	97	13.8%
Transportation/Warehousing/Utilities	88	12.5%
Information	10	1.4%
Finance/Insurance/Real Estate/Rental/Leasing	40	5.7%
Professional/Scientific/Mgmt/Admin/Waste Mgmt Services	51	7.2%
Educational/Health/Social Services	101	14.3%
Arts/Entertainment/Recreation/Accommodation/Food Services	77	10.9%
Other Services	12	1.7%
Public Administration	27	3.8%
Workers 16+ by Place of Work		
Total	688	100.0%
Worked in State of Residence	687	99.9%
Worked in County of Residence	390	56.7%
Worked outside County of Residence	297	43.2%
Worked outside State of Residence	1	0.1%
Workers 16+ by Means of Transportation to Work		
Total	688	100.0%
Drove Alone - Car, Truck, or Van	492	71.5%
Carpooled - Car, Truck, or Van	172	25.0%
Public Transportation	0	0.0%
Walked	7	1.0%
Other Means	2	0.3%
Worked at Home	15	2.2%
Workers 16+ by Travel Time to Work		
Total	689	100.0%
Did not Work at Home	674	97.8%
Less than 5 minutes	14	2.0%
5 to 9 minutes	101	14.7%
10 to 19 minutes	195	28.3%
20 to 24 minutes	77	11.2%
25 to 34 minutes	110	16.0%
35 to 44 minutes	73	10.6%
45 to 59 minutes	75	10.9%
60 to 89 minutes	13	1.9%
90 or more minutes	16	2.3%
Worked at Home	15	2.2%
Average Travel Time to Work (in minutes)	25.3	

Source: U.S. Census Bureau, Census 2000 Summary File 3.



motiva

Census 2000 Summary Profile

Latitude: 30.11

Longitude: -90.89

Site Type: Radius

Radius: 3.0 miles

	Number	Percent
Households by Type		
Total	571	100.0%
Family Households	448	78.5%
Married-couple Families	250	43.8%
With Related Children	130	22.8%
Other Family (No Spouse Present)	198	34.7%
With Related Children	136	23.8%
Nonfamily Households	123	21.5%
Householder Living Alone	108	18.9%
Householder Not Living Alone	15	2.6%
Households with Related Children	266	46.7%
Households by Age of Householder		
Total	571	100.0%
Householder Age 15 - 24	26	4.6%
Householder Age 25 - 34	78	13.7%
Householder Age 35 - 44	121	21.2%
Householder Age 45 - 54	135	23.6%
Householder Age 55 - 64	87	15.2%
Householder Age 65 - 74	69	12.1%
Householder Age 75 - 84	48	8.4%
Householder Age 85+	7	1.2%
Households by Size		
Total	572	100.0%
1 Person Household	108	18.9%
2 Person Household	144	25.2%
3 Person Household	111	19.4%
4 Person Household	100	17.5%
5 Person Household	53	9.3%
6 Person Household	26	4.5%
7+ Person Household	30	5.2%
Households by Poverty Status in 1999 and HH Type		
Total	583	100.0%
Below Poverty Level	134	23.0%
Married-couple Family	16	2.7%
Other Family - Male Householder, No Wife Present	0	0.0%
Other Family - Female Householder, No Husband Present	93	16.0%
Nonfamily Households	25	4.3%
At or Above Poverty Level	449	77.0%
Married-couple Family	290	49.7%
Other Family - Male Householder, No Wife Present	22	3.8%
Other Family - Female Householder, No Husband Present	55	9.4%
Nonfamily Households	82	14.1%

Source: U.S. Census Bureau, Census 2000 Summary File 1 and 3.



motiva

Census 2000 Summary Profile

Latitude: 30.11
 Longitude: -90.89
 Radius: 3.0 miles

Site Type: Radius

	Number	Percent
Households by Household Income in 1999		
Household Income Base	582	100.0%
< \$15,000	131	22.5%
\$15,000 - \$24,999	89	15.3%
\$25,000 - \$34,999	79	13.6%
\$35,000 - \$49,999	120	20.6%
\$50,000 - \$74,999	96	16.5%
\$75,000 - \$99,999	46	7.9%
\$100,000 - \$149,999	9	1.5%
\$150,000 - \$199,999	8	1.4%
\$200,000 +	4	0.7%
Median Household Income	\$34,016	-
Average Household Income	\$40,775	-
Families by Family Income in 1999		
Family Income Base	478	100.0%
< \$15,000	98	20.5%
\$15,000 - \$24,999	80	16.7%
\$25,000 - \$34,999	68	14.2%
\$35,000 - \$49,999	81	16.9%
\$50,000 - \$74,999	89	18.6%
\$75,000 - \$99,999	41	8.6%
\$100,000 - \$149,999	9	1.9%
\$150,000 - \$199,999	8	1.7%
\$200,000+	4	0.8%
Median Family Income	\$34,124	-
Average Family Income	\$42,790	-
Owner Occupied HUs by Value		
Total	444	100.0%
< \$50,000	283	63.7%
\$50,000 - \$99,999	110	24.8%
\$100,000 - \$149,999	28	6.3%
\$150,000 - \$199,999	18	4.1%
\$200,000 - \$299,999	2	0.5%
\$300,000 - \$499,999	2	0.5%
\$500,000 - \$999,999	0	0.0%
\$1,000,000+	1	0.2%
Median Home Value	\$39,375	-
Average Home Value	\$53,528	-
Specified Renter Occupied HUs by Contract Rent		
Total	138	100.0%
With Cash Rent	82	59.4%
< \$200	33	23.9%
\$200 - \$499	48	34.8%
\$500 - \$749	1	0.7%
\$750 - \$999	0	0.0%
\$1,000 - \$1,499	0	0.0%
\$1,500 - \$1,999	0	0.0%
\$2000+	0	0.0%
No Cash Rent	56	40.6%
Median Rent	\$233	-
Average Rent	\$191	-

Data Note: Specified Renter Occupied HUs exclude houses on 10+ acres. Average Rent excludes units paying no cash rent. Census 2000 medians are computed from reported data distributions.

Source: U.S. Census Bureau, Census 2000 Summary File 3.



motiva

Census 2000 Summary Profile

Latitude: 30.11

Longitude: -90.89

Radius: 3.0 miles

Site Type: Radius

	Number	Percent
Housing Units by Occupancy		
Total	658	100.0%
Occupied Housing Units	570	86.6%
Owner Occupied Housing Units	474	72.0%
Average Household Size	3.43	-
Renter Occupied Housing Units	96	14.6%
Average Household Size	3.22	-
Vacant Housing Units	88	13.4%
For Rent	18	2.7%
For Sale Only	10	1.5%
Rented or Sold, not Occupied	5	0.8%
For Seasonal/Recreational/Occasional Use	2	0.3%
For Migrant Workers	1	0.2%
Other Vacant	52	7.9%
Housing Units by Units in Structure		
Total	641	100.0%
1 Detached	420	65.5%
1 Attached	1	0.2%
2	17	2.7%
3 or 4	5	0.8%
5 to 9	0	0.0%
10 to 19	0	0.0%
20+	12	1.9%
Mobile Home	186	29.0%
Other	0	0.0%
Housing Units by Year Structure Built		
Total	660	100.0%
1999 to March 2000	9	1.4%
1995 to 1998	49	7.4%
1990 to 1994	33	5.0%
1980 to 1989	79	12.0%
1970 to 1979	166	25.2%
1969 or Earlier	324	49.1%
Median Year Structure Built	1970	-
Households by Year Householder Moved In		
Total	582	100.0%
Moved in 1999 to March 2000	39	6.7%
Moved in 1995 to 1998	146	25.1%
Moved in 1990 to 1994	112	19.2%
Moved in 1980 to 1989	92	15.8%
Moved in 1970 to 1979	67	11.5%
Moved in 1969 or Earlier	126	21.6%
Median Year Householder Moved In	1990	-
Households by Vehicles Available		
Total	583	100.0%
None	82	14.1%
1	196	33.6%
2	248	42.5%
3	51	8.7%
4	6	1.0%
5+	0	0.0%
Average Number of Vehicles Available	1.5	-

Source: U.S. Census Bureau, Census 2000 Summary File 1 and 3.

APPENDIX G
BIOSLUDGE ANALYSES

Pace Analytical

OCT 08 1998

Pace Analytical Services, Inc.
1000 Riverbend Blvd, Suite F
St. Rose, LA 70087

Tel: 504-469-0333
Fax: 504-469-0555

Amanda Silvey
Motiva/Star Enterprise
Post Office Box 37
Convent, LA 70723

Project: PERMIT P-0126 SAMPLING
Site: STAR ENTERPRISE PLANT
Episode: OGQ

To: Amanda Silvey

Enclosed please find the analytical results for sample(s) received by
Pace Analytical Services, Inc. - New Orleans.

This report contains a summary of the quality control data associated
with the analyses as well as copies of the chain-of-custody documents.

You may direct any inquiries concerning this report to your Project
Manager, or any one of the Project Managers listed below:

Ms. Karen H. Brown, Manager, Ext. 325
Mr. William R. Shackelford, Ext. 326
Ms. Cindy Olavesen, Ext. 327

Sincerely,

Karen H. Brown
Project Manager

Oct. 9 1998
Date

Enclosures

Pace Analytical Services, Inc. - New Orleans
Sample Cross Reference SummaryEpisode: OGQ Client: Motiva/Star EnterpriseProject: PERMIT P-0126 SAMPLINGSite: STAR ENTERPRISE PLANT

<u>Lab ID</u>	<u>Client ID</u>	<u>Description</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
OGQ-001	SOUTH POND		Other	09/16/98	09/17/98
OGQ-002	AB-1		Other	09/16/98	09/17/98
OGQ-003	AB-2		Other	09/16/98	09/17/98
OGQ-004	FINAL SETTLING POND		Other	09/16/98	09/17/98

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>SOUTH POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-001</u>	Episode: <u>OGO</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8260 Skinner Volatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27734</u>
	Units: <u>ug/kg</u> Target List: <u>8260SKMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>24-Sep-98</u> Analyzed: <u>24-Sep-98 17:57 DE</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
71-43-2	Benzene	1	ND		625	
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		1250	
75-15-0	Carbon disulfide	1	ND		625	
108-90-7	Chlorobenzene	1	ND		625	
67-66-3	Chloroform	1	ND		625	
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	1	ND		625	
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		625	
123-91-1	1,4-Dioxane	1	ND		62500	
100-41-4	Ethylbenzene	1	1680		625	
100-42-5	Styrene	1	ND		625	
108-88-3	Toluene	1	1500		625	
120-12-7	Xylene (total)	1	3650		625	

ND compounds reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extracts. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-98 12:11 PM

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Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>SOUTH POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-001</u>	Episode: <u>OGQ</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8270 Skinner Semivolatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27818</u>
	Units: <u>ug/kg</u> Target List: <u>8270SKNIED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>30-Sep-98, 18:27 JA</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
120-12-7	Anthracene	1	ND		10000	
108-98-8	Benzenethiol (Thiophenol)	1	ND		10000	
56-55-3	Benzo(a)anthracene	1	ND		10000	
203-99-2	Benzo(b)fluoranthene	1	ND		10000	
207-08-09	Benzo(k)fluoranthene	1	ND		10000	
50-32-6	Benzo(a)pyrene	1	ND		10000	
35-68-7	Butylbenzylphthalate	1	ND		10000	
218-01-9	Chrysene	1	ND		10000	
224-24-0	Dibenz(a,h)acridine	1	ND		10000	
53-70-3	Dibenz(a,h)anthracene	1	ND		10000	
34-74-2	Di-n-butylphthalate	1	ND		10000	
95-50-8	1,2-Dichlorobenzene (o-Dichlorobenzene)	1	ND		10000	
91-72-7	1,3-Dichlorobenzene (m-Dichlorobenzene)	1	ND		10000	
91-67-7	1,4-Dichlorobenzene (p-Dichlorobenzene)	1	ND		10000	
106-92-2	Diethylphthalate	1	10300		10000	
67-56-1	1,2-Dimethylbenzo(a)anthracene	1	ND		10000	
106-70-9	2,4-Dimethylphenol	1	ND		10000	
298-12-3	Dimethylphthalate	1	ND		10000	
51-25-3	2,4-Dinitrophenol	1	ND		25000	
117-82-0	Di-n-octylphthalate	1	ND		10000	
117-81-7	diis(2-Ethylhexyl)phthalate	1	ND		10000	
206-44-0	Fluoranthene	1	ND		10000	
95-13-6	Indene	1	ND		10000	
206-90-7	Methyl chrysene	1	ND	A4	10000	
91-02-4	1-Methylnaphthalene	1	31000		10000	
95-49-7	2-Methylphenol (o-Cresol)	1	ND		10000	
95-59-4	3-Methylphenol (m-Cresol)	1	ND	A7	10000	
106-42-5	4-Methylphenol (p-Cresol)	1	ND		10000	
91-20-3	Naphthalene	1	ND		10000	
100-02-7	4-Nitrophenol (p-Nitrophenol)	1	ND		25000	
55-01-8	Phenanthrene	1	13100		10000	
108-95-2	Phenol	1	ND		10000	
129-00-0	Pyrene	1	40500		10000	
110-86-1	Pyridine	1	ND		10000	

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-98 12:14:23

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>SOUTH POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-001</u>	Episode: <u>OGQ</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8270 Skinner Semivolatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27818</u>
	Units: <u>ug/kg</u> Target List: <u>8270SKMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>30-Sep-98 18:27 JA</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
91-22-5	Quinoline	1	ND		10000	
35 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-98 12:19:35

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Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>AB-1</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-002</u>	Episode: <u>OGO</u> Sample Qu: <u>M2</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8260 Skinner Volatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27734</u>
	Units: <u>ug/kg</u> Target List: <u>8260SKLOW</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: Analyzed: <u>23-Sep-98 22:11 DE</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
71-43-2	Benzene	1	ND		5.00	
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		10.0	
75-15-0	Carbon disulfide	1	ND		5.00	
108-90-7	Chlorobenzene	1	ND		5.00	
67-66-3	Chloroform	1	ND		5.00	
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	1	ND		5.00	
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		5.00	
123-91-1	1,4-Dioxane	1	ND		250	
100-41-4	Ethylbenzene	1	ND		5.00	
100-42-5	Styrene	1	ND		5.00	
108-88-3	Toluene	1	ND		5.00	
133-20-7	Xylenes (total)	1	ND		5.00	

12 compounds reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:19:33

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>AB-1</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-002</u>	Episode: <u>OGO</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8270 Skinner Semivolatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27818</u>
	Units: <u>ug/kg</u> Target List: <u>8270SKMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>30-Sep-98 19:15 JA</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
120-12-7	Anthracene	1	ND		10000	
108-98-5	Benzenethiol (Thiophenol)	1	ND		10000	
36-55-3	Benzo[a]anthracene	1	ND		10000	
205-99-2	Benzo[b]fluoranthene	1	ND		10000	
207-08-09	Benzo[k]fluoranthene	1	ND		10000	
50-32-8	Benzo[a]pyrene	1	ND		10000	
85-68-7	Bis(2-ethylhexyl)phthalate	1	ND		10000	
218-01-9	Chrysene	1	ND		10000	
324-42-0	Dibenz[a,h]acridine	1	ND		10000	
53-70-3	Dibenz[a,h]anthracene	1	ND		10000	
54-74-2	Di-n-butylphthalate	1	ND		10000	
95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	1	ND		10000	
94-73-1	1,3-Dichlorobenzene (m-Dichlorobenzene)	1	ND		10000	
94-72-7	1,4-Dichlorobenzene (p-Dichlorobenzene)	1	ND		10000	
106-60-2	Diethylphthalate	1	12500		10000	
57-10-6	7,12-Dimethylbenzo[a]anthracene	1	ND		10000	
123-67-6	2,4-Dimethylphenol	1	ND		10000	
131-11-3	Dimethylphthalate	1	ND		10000	
51-28-5	2,4-Dinitrophenol	1	ND		25000	
117-82-4	Di-n-octylphthalate	1	ND		10000	
117-81-7	bis(2-Ethylhexyl)phthalate	1	ND		10000	
200-207-1	Fluoranthene	1	ND		10000	
48-13-6	Indene	1	ND		10000	
unknown	Methyl chrysene	1	ND	A4	10000	
84-12-9	1-Methylnaphthalene	1	ND		10000	
95-48-7	2-Methylphenol (o-Cresol)	1	ND		10000	
105-34-4	3-Methylphenol (m-Cresol)	1	ND	A7	10000	
106-44-5	4-Methylphenol (p-Cresol)	1	ND		10000	
91-20-3	Naphthalene	1	ND		10000	
100-02-7	4-Nitrophenol (p-Nitrophenol)	1	ND		25000	
85-01-8	Phenanthrene	1	ND		10000	
103-95-2	Phenol	1	ND		10000	
129-00-0	Pyrene	1	ND		10000	
110-86-1	Pyridine	1	ND		10000	

ND denotes Not Detected at or above the adjusted reporting limit.

DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.

Reporting Limit is corrected for sample size, dilution and moisture content if applicable.

Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:19:35

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>AB-1</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-002</u>	Episode: <u>OGO</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8270 Skinner Semivolatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27818</u>
	Units: <u>ug/kg</u> Target List: <u>8270SKMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>30-Sep-98 19:15 JA</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
91-22-5	Quinoline	1	ND		10000	

35 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:14:05

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>AB-2</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-003</u>	Episode: <u>OGO</u> Sample Qu:
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8260 Skinner Volatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27734</u>
	Units: <u>ug/kg</u> Target List: <u>8260SKLOW</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: Analyzed: <u>23-Sep-98 23:08 DE</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
71-43-2	Benzene	1	ND		5.00	
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		10.0	
75-15-0	Carbon disulfide	1	8.28		5.00	
108-90-7	Chlorobenzene	1	ND		5.00	
67-66-3	Chloroform	1	ND		5.00	
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	1	ND		5.00	
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		5.00	
123-91-1	1,4-Dioxane	1	ND		250	
100-41-4	Ethylbenzene	1	ND		5.00	
100-42-5	Styrene	1	ND		5.00	
105-85-2	Toluene	1	ND		5.00	
72-12-0	Xylene (total)	1	ND		5.00	

11 compounds reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:15:35

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>AB-2</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-003</u>	Episode: <u>OGQ</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8270 Skinner Semivolatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27818</u>
	Units: <u>ug/kg</u> Target List: <u>8270SKMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>30-Sep-98 17:39 JA</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
120-12-7	Anthracene	1	ND		10000	
108-98-6	Benzenethiol (Thiophenol)	1	ND		10000	
56-55-3	Benzo(a)anthracene	1	ND		10000	
205-99-2	Benzo(b)fluoranthene	1	ND		10000	
207-08-09	Benzo(k)fluoranthene	1	ND		10000	
50-32-8	Benzo(a)pyrene	1	ND		10000	
85-68-7	Butylbenzylphthalate	1	ND		10000	
218-01-9	Chrysene	1	ND		10000	
224-42-0	Dibenz(a,h)acridine	1	ND		10000	
53-70-3	Dibenz(a,h)anthracene	1	ND		10000	
52-74-2	Di-n-butylphthalate	1	ND		10000	
95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	1	ND		10000	
95-59-6	1,3-Dichlorobenzene (m-Dichlorobenzene)	1	ND		10000	
95-69-6	1,4-Dichlorobenzene (p-Dichlorobenzene)	1	ND		10000	
106-96-2	Diethylphthalate	1	10-00		10000	
57-14-1	7,12-Dimethylbenzo(a)anthracene	1	ND		10000	
131-57-3	2,4-Dimethylphenol	1	ND		10000	
131-55-5	Dimethylphthalate	1	ND		10000	
53-25-5	2,4-Dinitrophenol	1	ND		25000	
117-84-0	Di-n-octylphthalate	1	ND		10000	
117-81-7	bis(2-Ethylhexyl)phthalate	1	ND		10000	
206-44-0	Fluoranthene	1	ND		10000	
95-13-0	Indene	1	ND		10000	
120-12-7	Methylbenzene	1	ND	A4	10000	
90-12-0	1-Methylnaphthalene	1	ND		10000	
95-45-7	2-Methylphenol (o-Cresol)	1	ND		10000	
105-54-4	3-Methylphenol (m-Cresol)	1	ND	A4	10000	
106-44-5	4-Methylphenol (p-Cresol)	1	ND		10000	
91-20-3	Naphthalene	1	ND		10000	
100-02-7	4-Nitrophenol (p-Nitrophenol)	1	ND		25000	
55-01-8	Phenanthrene	1	ND		10000	
108-95-2	Phenol	1	ND		10000	
129-00-0	Pyrene	1	ND		10000	
10-86-1	Pyridine	1	ND		10000	

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, -et denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-98 12:18 36

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>AB-2</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-003</u>	Episode: <u>OGQ</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8270 Skinner Semivolatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27818</u>
	Units: <u>ug/kg</u> Target List: <u>8270SKMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>30-Sep-98 17:39 JA</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
91-22-5	Quinoline	1	ND		10000	
35 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/99 12:15:06

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>FINAL SETTLING POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-004</u>	Episode: <u>OGO</u> Sample Qu: <u>M2</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8260 Skinner Volatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27734</u>
	Units: <u>ug/kg</u> Target List: <u>8260SKLOW</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: Analyzed: <u>24-Sep-98 0:05 DE</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
71-43-2	Benzene	1	ND		5.00	
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		10.0	
75-15-0	Carbon disulfide	1	ND		5.00	
108-90-7	Chlorobenzene	1	ND		5.00	
67-66-3	Chloroform	1	ND		5.00	
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	1	ND		5.00	
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		5.00	
123-91-1	1,4-Dioxane	1	ND		250	
100-41-4	Ethylbenzene	1	ND		5.00	
100-42-5	Styrene	1	ND		5.00	
105-88-3	Toluene	1	10.5		5.00	
221-20-7	Xylene (total)	1	7.51		5.00	

12 compounds reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:18:34

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>FINAL SETTLING POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-004</u>	Episode: <u>OGQ</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8270 Skinner Semivolatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27818</u>
	Units: <u>ug/kg</u> Target List: <u>8270SKMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>30-Sep-98 20:02 JA</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
120-12-7	Anthracene	1	ND		10000	
108-98-5	Benzenethiol (Thiophenol)	1	ND		10000	
56-55-3	Benz[a]anthracene	1	ND		10000	
205-99-2	Benz[b]fluoranthene	1	ND		10000	
207-08-09	Benz[k]fluoranthene	1	ND		10000	
50-32-8	Benz[a]pyrene	1	ND		10000	
55-68-7	Butylbenzylphthalate	1	ND		10000	
213-09-9	Chrysene	1	ND		10000	
204-42-0	Dibenz[a,h]acridine	1	ND		10000	
53-70-3	Dibenz[a,h]anthracene	1	ND		10000	
54-74-2	Di-n-butylphthalate	1	ND		10000	
95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	1	ND		10000	
94-72-3	1,3-Dichlorobenzene (m-Dichlorobenzene)	1	ND		10000	
106-46-7	1,4-Dichlorobenzene (p-Dichlorobenzene)	1	ND		10000	
94-99-2	Diethylphthalate	1	10400		10000	
57-11-4	7,12-Dimethylbenzo[a]anthracene	1	ND		10000	
54-75-4	2,4-Dimethylphenol	1	ND		10000	
121-11-3	Dimethylphthalate	1	ND		10000	
51-28-5	2,4-Dinitrophenol	1	ND		25000	
117-84-0	Di-n-octylphthalate	1	ND		10000	
117-83-7	bis(2-Ethylhexyl)phthalate	1	ND		10000	
206-12-4	Fluoranthene	1	ND		10000	
95-13-6	Indene	1	ND		10000	
unknown	Methyl styrene	1	ND	A4	10000	
91-21-2	1-Methylnaphthalene	1	ND		10000	
95-48-7	2-Methylphenol (o-Cresol)	1	ND		10000	
108-29-2	3-Methylphenol (m-Cresol)	1	ND	A7	10000	
106-44-5	4-Methylphenol (p-Cresol)	1	ND		10000	
91-20-3	Naphthalene	1	ND		10000	
100-02-7	4-Nitrophenol (p-Nitrophenol)	1	ND		25000	
55-01-5	Phenanthrene	1	ND		10000	
108-95-2	Phenol	1	ND		10000	
129-00-0	Pyrene	1	ND		10000	
110-86-1	Pyridine	1	ND		10000	

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-99 12:14:36

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>FINAL SETTLING POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-004</u>	Episode: <u>OGQ</u> Sample Qu: <u>P5</u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8270 Skinner Semivolatile Organics</u>	Prep Level: <u>Other</u> Batch: <u>27818</u>
	Units: <u>ug/kg</u> Target List: <u>8270SKMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>30-Sep-98 20:02 JA</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
91-22-5	Quinoline	1	ND		10000	

35 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-regular sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-98 12:18:26

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>SOUTH POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-001</u>	Episode: <u>OGO</u> Sample Qu:
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8015B TPH Diesel & Oil Range Organics</u>	Prep Level: <u>Other</u> Batch: <u>27808</u>
<u>(C10-C24 & C24+)</u>	Units: <u>mg/kg</u> Target List: <u>TPHMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>23-Sep-98 2:25 LSK</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
n/a	TPH - Diesel Range Organics	1	12600		500	
n/a	TPH - Oil Range Organics	1	11300		2000	

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and d/a denotes not applicable.

10-2-98 12:18:47

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>SOUTH POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-001</u>	Episode: <u>OGQ</u> Sample Qu:
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8015B TPH Gasoline Range Organics (C6- C10)</u>	Prep Level: <u>Other</u> Batch: <u>27892</u>
	Units: <u>ug/kg</u> Target List: <u>TPHGPTMED</u>
Prep Factor: <u>5.00</u> Leached: <u>n/a</u>	Prepared: <u>30-Sep-98</u> Analyzed: <u>30-Sep-98 16:30 SLF</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
n/a	TPH - Gasoline Range Organics	1	556000		25000	
1 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:18:47

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>AB-1</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-002</u>	Episode: <u>OGQ</u> Sample Qu: <u> </u>
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8015B TPH Diesel & Oil Range Organics</u>	Prep Level: <u>Other</u> Batch: <u>27808</u>
<u>(C10-C24 & C24+)</u>	Units: <u>mg/kg</u> Target List: <u>TPH MED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>23-Sep-98 2:52 LSK</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
n/a	TPH - Diesel Range Organics	1	1910		500	
n/a	TPH - Oil Range Organics	1	3870		2000	

1 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:18:47

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>AB-1</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-002</u>	Episode: <u>OGO</u> Sample Qu:
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8015B TPH Gasoline Range Organics (C6-C10)</u>	Prep Level: <u>Other</u> Batch: <u>27892</u>
	Units: <u>ug/kg</u> Target List: <u>TPHGPTMED</u>
Prep Factor: <u>1.00</u>	Leached: <u>n/a</u> Prepared: <u>30-Sep-98</u> Analyzed: <u>30-Sep-98 16:49 SLF</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
n.a	TPH - Gasoline Range Organics	1	ND		5000	

1 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:15:47

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>AB-2</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-003</u>	Episode: <u>OGO</u> Sample Qu:
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8015B TPH Diesel & Oil Range Organics</u> <u>(C10-C24 & C24+)</u>	Prep Level: <u>Other</u> Batch: <u>27808</u>
	Units: <u>mg/kg</u> Target List: <u>TPH MED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>23-Sep-98 3:19 LSK</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
n a	TPH - Diesel Range Organics	1	844		500	
n a	TPH - Oil Range Organics	1	ND		2000	

2 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
For moisture results, wet denotes result is not corrected for moisture and na denotes not applicable.

10-2-98 12:13:47

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>AB-2</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-003</u>	Episode: <u>OGQ</u> Sample Qu:
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8015B TPH Gasoline Range Organics (C6-C10)</u>	Prep Level: <u>Other</u> Batch: <u>27892</u>
	Units: <u>ug/kg</u> Target List: <u>TPHGPTMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>30-Sep-98</u> Analyzed: <u>30-Sep-98 18:53 SLF</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
n/a	TPH - Gasoline Range Organics	1	ND		5000	
1 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:11:47

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Protocol

Client ID: <u>FINAL SETTLING POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-004</u>	Episode: <u>OGO</u> Sample Qu:
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8015B TPH Diesel & Oil Range Organics</u>	Prep Level: <u>Other</u> Batch: <u>27808</u>
<u>(C10-C24 & C24+)</u>	Units: <u>mg/kg</u> Target List: <u>TPH MED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>22-Sep-98</u> Analyzed: <u>23-Sep-98 3:46 LSK</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
n.a	TPH - Diesel Range Organics	1	ND		500	
n.a	TPH - Oil Range Organics	1	ND		2000	

1 compound(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu has qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-09-2016 JH

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Protocol

Client ID: <u>FINAL SETTLING POND</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-004</u>	Episode: <u>OGO</u> Sample Qu:
Description: <u>None</u>	Matrix: <u>Other</u> % Moisture: <u>n/a</u>
Method: <u>SW 8015B TPH Gasoline Range Organics (C6-C10)</u>	Prep Level: <u>Other</u> Batch: <u>27892</u>
	Units: <u>ug/kg</u> Target List: <u>TPHGPTMED</u>
Prep Factor: <u>1.00</u> Leached: <u>n/a</u>	Prepared: <u>30-Sep-98</u> Analyzed: <u>30-Sep-98 19:13 SLF</u>

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit	Reg. Limit
n/a	TPH - Gasoline Range Organics	1	ND		5000	
1 compound(s) reported						

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of extract. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 12:18:48

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Inorganic Parameters

Client ID: SOUTH PONDClient: MOTIVA/STAR ENTERPRISEProject: PERMIT P-0126 SAMPLINGSite: STAR ENTERPRISE PLANTLab ID: OGO-001Episode: OGODescription: NoneMatrix: Other%Moisture: n/a

Parameter Name	Method	Batch	DF	PF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
Antimony	SW 6010	27768	1	1	ND		mg/kg	6.00	22-Sep-98	25-Sep-98	15:31 KJR
Arsenic	SW 6010	27768	1	1	ND		mg/kg	1.00	22-Sep-98	25-Sep-98	15:31 KJR
Barium	SW 6010	27768	1	1	ND		mg/kg	20.0	22-Sep-98	25-Sep-98	15:31 KJR
Beryllium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	25-Sep-98	15:31 KJR
Cadmium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	25-Sep-98	15:31 KJR
Chromium	SW 6010	27768	1	1	9.20		mg/kg	1.00	22-Sep-98	25-Sep-98	15:31 KJR
Cobalt	SW 6010	27768	1	1	ND		mg/kg	5.00	22-Sep-98	25-Sep-98	15:31 KJR
Copper	SW 6010	27768	1	1	11.2		mg/kg	2.50	22-Sep-98	25-Sep-98	15:31 KJR
Lead	SW 6010	27768	1	1	3.64		mg/kg	0.300	22-Sep-98	25-Sep-98	15:31 KJR
Manganese	SW 6010	27768	1	1	46.8		mg/kg	1.50	22-Sep-98	25-Sep-98	15:31 KJR
Mercury	SW 6010	27767	1	0.34	ND		mg/kg	0.100	22-Sep-98	23-Sep-98	16:34 SJM
Nickel	SW 6010	27768	1	1	331		mg/kg	4.00	22-Sep-98	25-Sep-98	15:31 KJR
Selenium	SW 6010	27768	1	1	1.28		mg/kg	0.500	22-Sep-98	25-Sep-98	15:31 KJR
Vanadium	SW 6010	27768	1	1	1020		mg/kg	5.00	22-Sep-98	25-Sep-98	15:31 KJR
Zinc	SW 6010	27768	1	1	291		mg/kg	2.00	22-Sep-98	25-Sep-98	15:31 KJR

12 parameters reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and a/s denotes not applicable.

10/2/98 12:15:58

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Inorganic Parameters

Client ID: AB-1Client: MOTIVA/STAR ENTERPRISEProject: PERMIT P-0126 SAMPLINGSite: STAR ENTERPRISE PLANTLab ID: OGQ-002Episode: OGQDescription: NoneMatrix: Other%Moisture: n/a

Parameter Name	Method	Batch	DF	PF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
Antimony	SW 6010	27768	1	1	ND		mg/kg	6.00	22-Sep-98	25-Sep-98	15:35 KJR
Arsenic	SW 6010	27768	1	1	ND		mg/kg	1.00	22-Sep-98	25-Sep-98	15:35 KJR
Barium	SW 6010	27768	1	1	ND		mg/kg	20.0	22-Sep-98	25-Sep-98	15:35 KJR
Beryllium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	25-Sep-98	15:35 KJR
Cadmium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	25-Sep-98	15:35 KJR
Chromium	SW 6010	27768	1	1	98.2		mg/kg	1.00	22-Sep-98	25-Sep-98	15:35 KJR
Cobalt	SW 6010	27768	1	1	ND		mg/kg	5.00	22-Sep-98	25-Sep-98	15:35 KJR
Copper	SW 6010	27768	1	1	8.37		mg/kg	2.50	22-Sep-98	25-Sep-98	15:35 KJR
Lead	SW 6010	27768	1	1	2.40		mg/kg	0.300	22-Sep-98	25-Sep-98	15:35 KJR
Manganese	SW 6010	27768	1	1	26.3		mg/kg	1.50	22-Sep-98	25-Sep-98	15:35 KJR
Mercury	SW 7471	27767	1	0.30	0.421		mg/kg	0.100	23-Sep-98	25-Sep-98	16:34 SJM
Nickel	SW 6010	27768	1	1	26.7		mg/kg	4.00	22-Sep-98	25-Sep-98	15:35 KJR
Selenium	SW 6010	27768	1	1	1.60		mg/kg	0.300	22-Sep-98	25-Sep-98	15:35 KJR
Silver	SW 6010	27768	1	1	63.4		mg/kg	5.00	22-Sep-98	25-Sep-98	15:35 KJR
Zinc	SW 6010	27768	1	1	124		mg/kg	2.00	22-Sep-98	25-Sep-98	15:35 KJR

12 parameters reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-99 12:15:59

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Inorganic Parameters

Client ID: AB-2Client: MOTIVA/STAR ENTERPRISEProject: PERMIT P-0126 SAMPLINGSite: STAR ENTERPRISE PLANTLab ID: OGO-003Episode: OGODescription: NoneMatrix: Other%Moisture: n/a

Parameter Name	Method	Batch	DF	PF	Result	Qu	Reporting		Prep.	Analysis	Reg. Limit
							Units	Limit			
Antimony	SW 6010	27768	1	1	ND		mg/kg	6.00	22-Sep-98	23-Sep-98	15:40 KJR
Arsenic	SW 6010	27768	1	1	ND		mg/kg	1.00	22-Sep-98	23-Sep-98	15:40 KJR
Barium	SW 6010	27768	1	1	41.0		mg/kg	20.0	22-Sep-98	23-Sep-98	15:40 KJR
Beryllium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	23-Sep-98	15:40 KJR
Cadmium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	23-Sep-98	15:40 KJR
Chromium	SW 6010	27768	1	1	125		mg/kg	1.00	22-Sep-98	23-Sep-98	15:40 KJR
Cobalt	SW 6010	27768	1	1	ND		mg/kg	5.00	22-Sep-98	23-Sep-98	15:40 KJR
Copper	SW 6010	27768	1	1	5.93		mg/kg	2.50	22-Sep-98	23-Sep-98	15:40 KJR
Lead	SW 6010	27768	1	1	2.75		mg/kg	0.300	22-Sep-98	23-Sep-98	15:40 KJR
Manganese	SW 6010	27768	1	1	31.4		mg/kg	1.50	22-Sep-98	23-Sep-98	15:40 KJR
Mercury	SW 7471	27767	1	0.34	0.368		mg/kg	0.100	22-Sep-98	23-Sep-98	16:34 SJM
Nickel	SW 6010	27768	1	1	16.2		mg/kg	4.00	22-Sep-98	23-Sep-98	15:40 KJR
Selenium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	23-Sep-98	15:40 KJR
Vanadium	SW 6010	27768	1	1	12.3		mg/kg	5.00	22-Sep-98	23-Sep-98	15:40 KJR
Zinc	SW 6010	27768	1	1	90.5		mg/kg	2.00	22-Sep-98	23-Sep-98	15:40 KJR

12 parameters reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu has qualifier. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-29-98 12:14:59

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Inorganic Parameters

Client ID: FINAL SETTLING PONDClient: MOTIVA/STAR ENTERPRISEProject: PERMIT P-0126 SAMPLINGSite: STAR ENTERPRISE PLANTLab ID: OGO-004Episode: OGODescription: NoneMatrix: Other%Moisture: n/a

Parameter Name	Method	Batch	DF	PF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
Antimony	SW 6010	27768	1	1	ND		mg/kg	6.00	22-Sep-98	25-Sep-98	15:45 KJR
Arsenic	SW 6010	27768	1	1	4.14		mg/kg	1.00	22-Sep-98	25-Sep-98	15:45 KJR
Barium	SW 6010	27768	1	1	26.4		mg/kg	20.0	22-Sep-98	25-Sep-98	15:45 KJR
Beryllium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	25-Sep-98	15:45 KJR
Cadmium	SW 6010	27768	1	1	ND		mg/kg	0.500	22-Sep-98	25-Sep-98	15:45 KJR
Chromium	SW 6010	27768	1	1	7.97		mg/kg	1.00	22-Sep-98	25-Sep-98	15:45 KJR
Cobalt	SW 6010	27768	1	1	ND		mg/kg	5.00	22-Sep-98	25-Sep-98	15:45 KJR
Copper	SW 6010	27768	1	1	10.9		mg/kg	2.50	22-Sep-98	25-Sep-98	15:45 KJR
Lead	SW 6010	27768	1	1	2.48		mg/kg	0.300	22-Sep-98	25-Sep-98	15:45 KJR
Manganese	SW 6010	27768	1	1	173		mg/kg	1.50	22-Sep-98	25-Sep-98	15:45 KJR
Mercury	SW 7471	27767	1	0.37	ND		mg/kg	0.100	23-Sep-98	23-Sep-98	16:34 SJM
Nickel	SW 6010	27768	1	1	27.5		mg/kg	4.00	22-Sep-98	25-Sep-98	15:45 KJR
Selenium	SW 6010	27768	1	1	2.88		mg/kg	0.500	22-Sep-98	25-Sep-98	15:45 KJR
Vanadium	SW 6010	27768	1	1	25.2		mg/kg	5.00	22-Sep-98	25-Sep-98	15:45 KJR
Zinc	SW 6010	27768	1	1	334		mg/kg	2.00	22-Sep-98	25-Sep-98	15:45 KJR

15 parameters reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-98 12:13:59

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Inorganic Parameters

Client ID: SOUTH PONDClient: MOTIVA/STAR ENTERPRISEProject: PERMIT P-0126 SAMPLINGSite: STAR ENTERPRISE PLANTLab ID: OGQ-001Episode: OGQDescription: NoneMatrix: Other%Moisture: n/a

ParameterName	Method	Batch	DF	PF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
Chloride	SW 9251	27891	10	1	ND	D3 A	mg/kg	500	30-Sep-98	01-Oct-98 14:25 LAK	
Solids	SM 2540B	27836	1	1	17.9	C3	%	10.0	25-Sep-98	29-Sep-98 13:00 LAK	

2 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-98 17:22:54

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Inorganic Parameters

Client ID: <u>AB-1</u>	Client: <u>MOTIVA/STAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGQ-002</u>	Episode: <u>OGQ</u>
Description: <u>None</u>	Matrix: <u>Other</u> %Moisture: <u>n/a</u>

ParameterName	Method	Batch	DF	PF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
Chloride	SW 9251	27891	1	1	331	A17	mg/kg	50.0	30-Sep-98	01-Oct-98	14:23 LAK
Solids	SM 2540B	27836	1	1	43.9	C3	%	10.0	25-Sep-98	29-Sep-98	13:00 LAK

2 parameters reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, Wet denotes result is not corrected for moisture and N/A denotes not applicable.

10/2/98 11:22:24

Report of Laboratory Analysis
Pace Analytical Services, Inc. - New Orleans
Single Sample - Inorganic Parameters

Client ID: <u>AB-2</u>	Client: <u>MOTIVASTAR ENTERPRISE</u>
Project: <u>PERMIT P-0126 SAMPLING</u>	Site: <u>STAR ENTERPRISE PLANT</u>
Lab ID: <u>OGO-003</u>	Episode: <u>OGO</u>
Description: <u>None</u>	Matrix: <u>Other</u> %Moisture: <u>n/a</u>

ParameterName	Method	Batch	DF	PF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
Chloride	SM 9251	27891	1	1	451	AI	mg/kg	50.0	30-Sep-98	01-Oct-98	14:25 LAK
Solids	SM 2540B	27836	1	1	ND	C3	%	10.0	25-Sep-98	29-Sep-98	13:00 LAK

2 parameter(s) reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10/2/98 17:22:54

Report of Laboratory Analysis

Pace Analytical Services, Inc. - New Orleans

Single Sample - Inorganic Parameters

Client ID: FINAL SETTLING PONDClient: MOTIVA/STAR ENTERPRISEProject: PERMIT P-0126 SAMPLINGSite: STAR ENTERPRISE PLANTLab ID: OGO-004Episode: OGODescription: NoneMatrix: Other%Moisture: n/a

Parameter Name	Method	Batch	DF	PF	Result	Qu	Units	Reporting Limit	Prep.	Analysis	Reg. Limit
Chloride	SW 9251	27891	1	1	357	A17	mg/kg	50.0	30-Sep-98	01-Oct-98	14:25 LAK
Solids	SM 2540B	27836	1	1	17.8	C3	%	10.0	25-Sep-98	29-Sep-98	13:00 LAK

2 parameters reported

ND denotes Not Detected at or above the adjusted reporting limit.
 DF denotes Dilution Factor of final sample. The Prep Factor accounts for a non-routine sample size.
 Reporting Limit is corrected for sample size, dilution and moisture content if applicable.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.
 For moisture results, wet denotes result is not corrected for moisture and n/a denotes not applicable.

10-2-98 10:22:44

Pace Analytical Services, Inc. - New Orleans
Laboratory Quality Control Definitions

Our laboratory employs quality control (QC) measures to ensure the quality of our analytical data by defining its accuracy and precision. Presentation of the QC data with the report allows the data user the opportunity to evaluate these results and to gauge the method performance. In order to assist the understanding of these data, routine components of our QC program are defined below.

BATCH - A batch is a group of 20 samples or less of a given matrix and analysis by a specific protocol or analytical method.

BLANK - A method blank is a "clean" laboratory sample carried through the entire analytical process. One or more method blanks are prepared with each batch of samples. The analysis of method blanks demonstrates that method interferences caused by contaminants, reagents and glassware are known and minimized. A method blank should not contain any analytes of interest above the reporting limit. There are method allowances for common laboratory artifacts such as methylene chloride, acetone and bis-2-ethylhexyl phthalate.

LABORATORY CONTROL SPIKE - A laboratory control spike (LCS or blank spike) is a blank which has been spiked with known concentrations of target analytes. The LCS is carried through the entire analytical process. One or more LCS are prepared with each batch of samples. The percent recovery of the spiked analytes provides a measure of the accuracy of the analytical process in the absence of matrix effects.

MATRIX SPIKE - A matrix spike (MS) is a client sample which is spiked with known concentrations of target analytes. The MS is carried through the entire analytical process. One or more matrix spikes are prepared with every batch of samples. For organic methods, a matrix spike duplicate (MSD) is also prepared. The percent recovery of the spiked analytes provides a measure of the method accuracy in the selected sample and matrix.

DUPLICATE - A duplicate is a sample for which replicate aliquots are carried through the entire analytical process. Comparison of the original results to those of the duplicate results provides a measure of the method precision in the sample and matrix. By convention, precision is measured for inorganic analyses using a sample and a sample duplicate, whereas for organics analyses, an MS/MSD are used.

SURROGATE - A surrogate is a non-target analyte which is added to all samples and QC samples prior to extraction or analysis. The percent recovery of the surrogate provides a measure of the method accuracy in each sample tested. Surrogates are used for organics methods only.

QC LIMITS - QC limits specify the expected percent recovery range for a spiked compound. QC limits may be set by method criteria or calculated from laboratory generated data. For many methods, these limits are advisory and do not require corrective action if exceeded.

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Report of Quality Control

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Episode: OGO

Method: Med Soil GC/MS Volatile Organics

Batch: 27734

Units: ug/kg

Parameter Name	LCS Spike	LCS %Rec	LCS/D %Rec	MS Spike	MS %Rec	MSD %Rec	RPD %	QC Limits LCS MS/MSD	RPD Max	Qu
Acetone (2-Propanone, Dimethyl ketone)	6250	53		6250	89	85	4	1-200 1-200	50	
Acetone (2-Propanone, Dimethyl ketone)	50.0	68		50.0				1-200 1-200	50	
Benzene	50.0	100		50.0				66-142 66-142	21	
Bromodichloromethane	50.0	112		50.0				1-200 1-200	50	
Bromoform	50.0	93		50.0				1-200 1-200	50	
Bromomethane (Methyl bromide)	50.0	145		50.0				1-200 1-200	50	
Benzene	6250	93		6250	145 *	137	4	66-142 66-142	21	Q1
2-Butanone (Methyl ethyl ketone)	50.0	81		50.0				1-200 1-200	50	
Bromodichloromethane	6250	91		6250	148	140	6	1-200 1-200	50	
Carbon disulfide	50.0	112		50.0				1-200 1-200	50	
Bromoform	6250	86		6250	148	143	4	1-200 1-200	50	
Carbon tetrachloride	50.0	106		50.0				1-200 1-200	50	
Bromomethane (Methyl bromide)	6250	76		6250	109	108	1	1-200 1-200	50	
Chlorobenzene	50.0	103		50.0				60-133 60-133	21	
2-Butanone (Methyl ethyl ketone)	6250	134		6250	187	168	11	1-200 1-200	50	
Chloroethane	50.0	149		50.0				1-200 1-200	50	
Carbon disulfide	6250	89		6250	91	92	1	1-200 1-200	50	
Chloroform	50.0	106		50.0				1-200 1-200	50	
Carbon tetrachloride	6250	113		6250	166	138	5	1-200 1-200	50	
Chloromethane (Methyl chloride)	50.0	191		50.0				1-200 1-200	50	
1,4-Dichlorobenzene	6250	82		6250	129	127	2	60-133 60-133	21	
Dibromodichloromethane	50.0	107		50.0				1-200 1-200	50	
1,1-Dichloroethane	6250	76		6250	108	119	9	1-200 1-200	50	
1,1-Dichloroethane	50.0	101		50.0				1-200 1-200	50	
Chloroform	6250	112		6250	160	149	7	1-200 1-200	50	
1,1-Dichloroethane (Ethylene dichloride)	50.0	102		50.0				1-200 1-200	50	
Chloromethane (Methyl chloride)	6250	103		6250	112	114	2	1-200 1-200	50	
1,1-Dichloroethene (Dichloroethylene)	50.0	127		50.0				59-172 59-172	22	
1,1-Dichloroethene (total)	100	114		100				1-200 1-200	50	
Dibromochloromethane	6250	91		6250	157	151	4	1-200 1-200	50	
1,1-Dichloropropane	50.0	101		50.0				1-200 1-200	50	
trans-1,2-Dichloropropene	50.0	99		50.0				1-200 1-200	50	
cis-1,2-Dichloropropene	50.0	94		50.0				1-200 1-200	50	
Ethylbenzene	50.0	104		50.0				1-200 1-200	50	
2-Hexanone	50.0	78		50.0				1-200 1-200	50	
Methylene chloride (Dichloromethane)	50.0	111		50.0				1-200 1-200	50	
1,1-Dichloroethane	6250	151		6250	232 *	224 *	4	1-200 1-200	50	Q1
4-Methyl-2-pentanone (MIBK)	50.0	80		50.0				1-200 1-200	50	
1,2-Dichloroethane (Ethylene dichloride)	6250	99		6250	162	147	10	1-200 1-200	50	
Styrene	50.0	96		50.0				1-200 1-200	50	
1,2-Dichloroethene (Dichloroethylene)	6250	63		6250	96	100	5	59-172 59-172	22	
1,1,2,2-Tetrachloroethane	50.0	112		50.0				1-200 1-200	50	

* denotes recovery outside of QC limits.

MS spike concentrations are not corrected for moisture content of the spiked sample.

Report of Quality Control
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Episode: OGOMethod: Low Soil GC/MS Volatile OrganicsBatch: 27734Units: ug/kg

Parameter Name	LCS	LCS	LCSD	MS	MS	MSD	RPD	QC Limits		RPD	Qu
	Spike	%Rec	%Rec	Spike	%Rec	%Rec	%	LCS	MS/MSD	Max	
Tetrachloroethene (Perchloroethylene)	50.0	103		50.0				1-200	1-200	50	
1,2-Dichloropropane	6250	98		6250	145	140	3	1-200	1-200	50	
Toluene	50.0	98		50.0				59-139	59-139	21	
cis-1,3-Dichloropropene	6250	95		6250	146	140	4	1-200	1-200	50	
1,1,1-Trichloroethane (Methyl chloroform)	50.0	97		50.0				1-200	1-200	50	
trans-1,3-Dichloropropene	6250	94		6250	154	140	9	1-200	1-200	50	
1,1,2-Trichloroethane	50.0	104		50.0				1-200	1-200	50	
Trichloroethene (Trichloroethylene)	50.0	109		50.0				62-137	62-137	24	
Ethylbenzene	6250	79		6250	120	118	2	1-200	1-200	50	
Vinyl chloride (Chloroethene)	50.0	162		50.0				1-200	1-200	50	
2-Hexanone	6250	83		6250	128	122	5	1-200	1-200	50	
Xylene (total)	150	96		150				1-200	1-200	50	
Methylene chloride (Dichloromethane)	6250	56		6250	88	87	1	1-200	1-200	50	
4-Methyl-2-pentanone (MIBK)	6250	74		6250	112	106	5	1-200	1-200	50	
Styrene	6250	77		6250	119	116	3	1-200	1-200	50	
1,1,2,2-Tetrachloroethane	6250	94		6250	105	95	10	1-200	1-200	50	
Tetrachloroethene (Perchloroethylene)	6250	81		6250	127	128	1	1-200	1-200	50	
Xylene	6250	93		6250	141 *	143 *	1	59-139	59-139	21	Q1
1,1,1-Trichloroethane (Methyl chloroform)	6250	83		6250	130	128	1	1-200	1-200	50	
1,1,2-Trichloroethane	6250	85		6250	142	134	5	1-200	1-200	50	
Trichloroethene (Trichloroethylene)	6250	100		6250	195 *	192 *	2	62-137	62-137	24	Q1
Vinyl chloride (Chloroethene)	6250	96		6250	105	105	0	1-200	1-200	50	
Xylene (total)	13300	75		13300	121	113	2	1-200	1-200	50	

* all compounds reported

* denotes recovery outside of QC limits.

MS spike concentrations are not corrected for moisture content of the spiked sample.

10-2-98 12:16:48

Report of Quality Control

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Episode: OGOMethod: Med Soil GC/MS Semivolatile OrganicsBatch: 27818Units: ug/kg

Parameter Name	LCS Spike	LCS %Rec	LCS/D %Rec	MS Spike	MS %Rec	MS/D %Rec	RPD %	QC Limits		RPD Max	Qu
								LCS	MS/MSD		
Acenaphthene	50000	73		50000	66	49	30 *	28-137	31-137	19	
Anthracene	50000	71		50000	63	47	28	1-200	1-200	50	
Acenaphthylene	50000	71		50000	65	50	27	1-200	1-200	50	
Benzofluoranthene	50000	72		50000	66	49	29	1-200	1-200	50	
Benzo(b)fluoranthene	50000	70		50000	68	47	36	1-200	1-200	50	
Benzo(k)fluoranthene	50000	82		50000	63	55	15	1-200	1-200	50	
Benzo(a)pyrene	50000	78		50000	67	50	28	1-200	1-200	50	
Benzoic acid	50000	70		50000	27	21	26	1-200	1-200	50	
Bis(2-ethylhexyl)phthalate	50000	76		50000	71	50	34	1-200	1-200	50	
Benzo(g,h,i)perylene	50000	86		50000	71	54	27	1-200	1-200	50	
Chrysene	50000	73		50000	66	49	28	1-200	1-200	50	
Benzyl alcohol	50000	60		50000	52	53	3	1-200	1-200	50	
Dibenz(a,h)anthracene	50000	85		50000	70	54	25	1-200	1-200	50	
4-Bromophenyl phenyl ether	50000	77		50000	65	52	22	1-200	1-200	50	
Di-n-butylphthalate	50000	68		50000	56	41	32	1-200	1-200	50	
1,2-Dichlorobenzene (o-Dichlorobenzene)	50000	67		50000	59	53	9	1-200	1-200	50	
Chloroaniline (p-Chloroaniline)	50000	68		50000	71	69	3	1-200	1-200	50	
1,3-Dichlorobenzene (m-Dichlorobenzene)	50000	64		50000	53	49	8	1-200	1-200	50	
1,1-Dichloroethoxy methane	50000	62		50000	63	55	14	1-200	1-200	50	
1,4-Dichlorobenzene (p-Dichlorobenzene)	50000	67		50000	60	53	12	28-104	28-104	27	
1,1-Dichloroethyl ether	50000	57		50000	51	52	1	1-200	1-200	50	
Dimethyl carbonate	50000	115		50000	94	55	41	1-200	1-200	50	
1,1-Dichloroisopropyl ether	50000	44		50000	38	35	9	1-200	1-200	50	
4-Chloro-3-methylphenol (p-Chloro-m-cresol)	50000	70		50000	71	67	6	28-103	26-103	33	
2,4-Dimethylphenol	50000	75		50000	76	70	7	1-200	1-200	50	
2-Chloronaphthalene	50000	73		50000	66	52	24	1-200	1-200	50	
Dimethyl phthalate	50000	78		50000	73	68	6	1-200	1-200	50	
2-Chlorophenol (o-Chlorophenol)	50000	64		50000	64	62	4	28-102	25-102	50	
2,4-Dinitrophenol	50000	100		50000	10	4	84 *	1-200	1-200	50	
4-Chlorophenyl phenyl ether	50000	80		50000	71	59	34	1-200	1-200	50	
Di-n-octylphthalate	50000	72		50000	66	51	26	1-200	1-200	50	
4,4'-Diethylbiphenylphthalate	50000	72		50000	68	53	25	1-200	1-200	50	
Fluoranthene	50000	71		50000	59	45	26	1-200	1-200	50	
2-Methylazulene	50000	74		50000	67	52	25	1-200	1-200	50	
2-Methylphenol (o-Cresol)	50000	70		50000	65	64	1	1-200	1-200	50	
1,3-Dichlorobenzidine	50000	83		50000	76	65	16	1-200	1-200	50	
4-Methylphenol (p-Cresol)	50000	67		50000	60	65	7	1-200	1-200	50	
2,6-Dichlorophenol	50000	80		50000	83	78	6	1-200	1-200	50	
Naphthalene	50000	73		50000	68	57	19	1-200	1-200	50	
4-Nitrophenol (p-Nitrophenol)	50000	73		50000	51	47	9	28-114	11-114	50	
Phenanthrene	50000	70		50000	62	46	30	1-200	1-200	50	
Styrene	50000	61		50000	57	55	2	26-90	26-90	35	

* denotes recovery outside of QC limits.

MS spike concentrations are not corrected for moisture content of the spiked sample.

10/2/99 13:16:38

Report of Quality Control
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Episode: OGOMethod: Med Soil GC/MS Semivolatile OrganicsBatch: 27818Units: ug/kg

Parameter Name	LCS	LCS	LCS	MS	MS	MSD	RPD	QC Limits		RPD	Qu
	Spike	%Rec	%Rec	Spike	%Rec	%Rec	%	LCS	MS/MSD	Max	
4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cres	50000	110		50000	19	9	67 *	1-200	1-200	50	
Pyrene	50000	76		50000	73	54	29	35-142	35-142	36	
Pyridine	50000	71		50000	61	68	11	1-200	1-200	50	
2,4-Dinitrotoluene	50000	83		50000	79	68	15	28-89	28-89	47	
2,6-Dinitrotoluene	50000	87		50000	86	74	15	1-200	1-200	50	
Fluorene	50000	74		50000	67	50	28	1-200	1-200	50	
Hexachlorobenzene	50000	76		50000	66	52	23	1-200	1-200	50	
Hexachlorobutadiene	50000	80		50000	74	58	24	1-200	1-200	50	
Hexachlorocyclopentadiene	50000	98		50000	36	24	40	1-200	1-200	50	
Hexachloroethane	50000	66		50000	54	43	18	1-200	1-200	50	
Indenol (1,2,3-cd)pyrene	50000	82		50000	67	53	24	1-200	1-200	50	
Isophorone	50000	63		50000	60	55	9	1-200	1-200	50	
2-Methylnaphthalene	50000	78		50000	75	57	27	1-200	1-200	50	
2-Nitroaniline (o-Nitroaniline)	50000	62		50000	58	55	4	1-200	1-200	50	
3-Nitroaniline (m-Nitroaniline)	50000	80		50000	75	72	4	1-200	1-200	50	
4-Nitroaniline (p-Nitroaniline)	50000	79		50000	76	69	10	1-200	1-200	50	
Nitrobenzene	50000	64		50000	63	59	6	1-200	1-200	50	
2-Nitrophenol (o-Nitrophenol)	50000	80		50000	88	80	9	1-200	1-200	50	
N-Nitrosodiphenylamine (Diphenylamine)	50000	75		50000	66	53	22	1-200	1-200	50	
N-Nitroso-di-n-propylamine	50000	53		50000	49	46	7	28-126	41-126	38	
Pentachlorophenol	50000	77		50000	35	37	6	17-109	17-109	47	
1,2,4-Trichlorobenzene	50000	74		50000	75	69	23	38-107	38-107	23	
2,4,6-Trichlorophenol	50000	82		50000	77	72	7	1-200	1-200	50	
2,4,6-Trichlorophenol	50000	79		50000	67	66	2	1-200	1-200	50	

no compound(s) reported

* denotes recovery outside of QC limits.

MS spike concentrations are not corrected for moisture content of the spiked sample.

10:29 12.16.25

Report of Batch Surrogate Recovery

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Method: Water GC/MS Volatile OrganicsEpisode: OGOBatch: 27734

Lab ID	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
27734B1A18	99	99	107					
27734B1M15	101	104	113					
27734B1M21	103	108	90					
27734BA17	99	103	103					
27734BA18	99	99	107					
27734BA23	102	100	107					
27734BA24SK	101	100	106					
27734BK21	83	82	81					
27734BK23	91	93	91					
27734SA34	97	107	108					
27734SM15	99	114	115					
OEC-006	93	104	102					
OEV-002	90	90	98					
OEW-004	104	97	109					
OEW-014MS	112	116	112					
OEW-015MSD	108	113	106					
OGO-001	104	96	105					
OGO-002	91	108	113					
OGO-002RE	86	107	104					
OGO-003	90	124 *	112					
OGO-003RE	91	127 *	111					
OGO-004	90	112	112					
OGO-004RE	90	130 *	114					
OGZ-001	87	94	93					
OGZ-002	89	93	91					
OGZ-003	83	85	81					
OGZ-004	82	133 D	74 D					
OHF-001	98	113	99					
OHF-002	101	110	99					
OHF-003	101	114	99					
OHF-004	99	112	98					
OHF-005	100	109	99					
OHF-006	99	115	102					
OHF-007	102	119	101					
<hr/>								
QC limits:	88 - 110	86 - 115	86 - 118					

Sur 1: Toluene-d8 (S)

Sur 2: 4-Bromofluorobenzene (S)

Sur 3: Dibromofluoromethane (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.

A Lab ID consisting of a batch number with a B suffix is a method blank.

A Lab ID consisting of a batch number with a S suffix is an LCS.

A Lab ID with a MS suffix is a matrix spike.

A Lab ID with a MSD suffix is a matrix spike duplicate.

10/2/99 12:17 PM

Report of Method Blank
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Lab ID: 27734B1M21

Description: Low Soil Method Blank

Episode: OGO

% Moisture: n/a

Method: Low Soil GC/MS Volatile Organics

Batch: 27734

Units: ug/kg

Prep Factor: 1

Leached: n/a

Prepared:

Analyzed: 21-Sep-98 16:28 DE

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		5.00
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		10.0
75-15-0	Carbon disulfide	1	ND		5.00
108-90-7	Chlorobenzene	1	ND		5.00
67-66-3	Chloroform	1	ND		5.00
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	1	ND		5.00
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		5.00
123-91-1	1,4-Dioxane	1	ND		250
100-41-4	Ethylbenzene	1	ND		5.00
100-42-5	Styrene	1	ND		5.00
108-88-3	Toluene	1	ND		5.00
1330-20-7	Xylene (total)	1	ND		5.00

(2 compounds) reported

Report of Method Blank

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Lab ID: 27734BA23Description: Low Soil Method BlankEpisode: OGO% Moisture: n/aMethod: Low Soil GC/MS Volatile OrganicsBatch: 27734Units: ug/kgPrep Factor: 1Leached: n/a

Prepared:

Analyzed: 23-Sep-98 15:33 DE

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
67-64-1	Acetone (2-Propanone, Dimethyl ketone)	1	ND		10.0
71-43-2	Benzene	1	ND		5.00
75-27-4	Bromodichloromethane	1	ND		5.00
75-25-2	Bromoform	1	ND		5.00
74-83-9	Bromomethane (Methyl bromide)	1	ND		10.0
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		10.0
75-15-0	Carbon disulfide	1	ND		5.00
56-23-5	Carbon tetrachloride	1	ND		5.00
103-90-7	Chlorobenzene	1	ND		5.00
75-00-3	Chloroethane	1	ND		10.0
67-66-3	Chloroform	1	ND		5.00
74-37-3	Chloromethane (Methyl chloride)	1	ND		10.0
124-48-1	Dibromochloromethane	1	ND		5.00
75-34-3	1,1-Dichloroethane	1	ND		5.00
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		5.00
75-35-4	1,1-Dichloroethene (Dichloroethylene)	1	ND		5.00
541-53-4	1,2-Dichloroethene (total)	1	ND		5.00
74-27-5	1,2-Dichloropropane	1	ND		5.00
74-28-5	cis-1,3-Dichloropropene	1	ND		5.00
74-29-6	trans-1,3-Dichloropropene	1	ND		5.00
100-42-5	Ethylbenzene	1	ND		5.00
50-11-6	2-Hexanone	1	ND		10.0
75-09-2	Methylene chloride (Dichloromethane)	1	5.14		5.00
108-11-1	4-Methyl-2-pentanone (MIBK)	1	ND		10.0
100-42-5	Styrene	1	ND		5.00
74-34-8	1,1,2,2-Tetrachloroethane	1	ND		5.00
127-18-4	Tetramethylethene (Perchloroethylene)	1	ND		5.00
105-85-3	Toluene	1	ND		5.00
75-35-4	1,1,1-Trichloroethane (Methyl chloroform)	1	ND		5.00
74-36-3	1,1,2-Trichloroethane	1	ND		5.00
79-01-6	Trichloroethene (Trichloroethylene)	1	ND		5.00
75-35-4	Vinyl chloride (Chloroethene)	1	ND		10.0
1330-20-7	Xylene (total)	1	ND		5.00

33 compounds reported

ND denotes Not Detected at or above the reporting limit.
 DF denotes Dilution Factor.
 RL denotes sample Reporting Limit.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10/2/98 17:40:01

Report of Method Blank

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Lab ID: 27734BK23Description: Low Soil Method BlankEpisode: OGO% Moisture: n/aMethod: Low Soil GC/MS Volatile OrganicsBatch: 27734Units: ug/kgPrep Factor: 1Leached: n/a

Prepared:

Analyzed: 23-Sep-98 13:06 KC

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
67-64-1	Acetone (2-Propanone, Dimethyl ketone)	1	ND		10.0
71-43-2	Benzene	1	ND		5.00
75-27-4	Bromodichloromethane	1	ND		5.00
75-25-2	Bromoform	1	ND		5.00
74-83-9	Bromomethane (Methyl bromide)	1	ND		10.0
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		10.0
75-15-0	Carbon disulfide	1	ND		5.00
56-23-5	Carbon tetrachloride	1	ND		5.00
108-90-7	Chlorobenzene	1	ND		5.00
75-00-5	Chloroethane	1	ND		10.0
67-66-3	Chloroform	1	ND		5.00
74-87-3	Chloromethane (Methyl chloride)	1	ND		10.0
124-48-1	Dibromochloromethane	1	ND		5.00
75-34-3	1,1-Dichloroethane	1	ND		5.00
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		5.00
75-35-4	1,1-Dichloroethene (Dichloroethylene)	1	ND		5.00
505-59-4	1,2-Dichloroethene (total)	1	ND		5.00
75-70-3	1,2-Dichloropropane	1	ND		5.00
75-71-4	cis-1,2-Dichloropropene	1	ND		5.00
75-72-5	trans-1,2-Dichloropropene	1	ND		5.00
100-41-4	Ethylbenzene	1	ND		5.00
59-73-9	2-Hexanone	1	ND		10.0
75-09-2	Methylene chloride (Dichloromethane)	1	16.1		5.00
108-10-1	4-Methyl-2-pentanone (MIBK)	1	ND		10.0
100-42-5	Styrene	1	ND		5.00
70-14-8	1,1,2,2-Tetrachloroethane	1	ND		5.00
127-18-4	Tetrachloroethene (Perchloroethylene)	1	ND		5.00
100-51-0	Toluene	1	5.68		5.00
75-35-6	1,1,1-Trichloroethane (Methyl chloroform)	1	ND		5.00
70-11-9	1,1,2-Trichloroethane	1	ND		5.00
79-01-6	Trichloroethene (Trichloroethylene)	1	ND		5.00
75-01-4	Vinyl chloride (Chloroethene)	1	ND		10.0
1230-20-7	Xylene (total)	1	ND		5.00

33 compound(s) reported

ND denotes Not Detected at or above the reporting limit.

DF denotes Dilution Factor.

RL denotes sample Reporting Limit.

Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10-2-98 17:40:01

Report of Method Blank

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Lab ID: 27734B1M15Description: Med Soil Method BlankEpisode: OGO% Moisture: n/aMethod: Med Soil GC/MS Volatile OrganicsBatch: 27734Units: ug/kgPrep Factor: 1Leached: n/a

Prepared:

Analyzed: 15-Sep-98 16:35 DE

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
67-64-1	Acetone (2-Propanone, Dimethyl ketone)	1	ND		1250
75-05-8	Acetonitrile (Methyl cyanide)	1	ND		6250
107-02-8	Acrolein (2-Propenal)	1	ND		1250
107-13-1	Acrylonitrile (2-Propenenitrile)	1	ND		1250
107-05-1	Allyl chloride (3-Chloropropene)	1	ND		625
71-43-2	Benzene	1	ND		625
75-27-4	Bromodichloromethane	1	ND		625
75-25-2	Bromoform	1	ND		625
74-83-9	Bromomethane (Methyl bromide)	1	ND		1250
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		1250
75-15-0	Carbon disulfide	1	ND		625
56-23-5	Carbon tetrachloride	1	ND		625
108-90-7	Chlorobenzene	1	ND		625
75-00-3	Chloroethane	1	ND		1250
67-66-3	Chloroform	1	ND		625
74-87-3	Chloromethane (Methyl chloride)	1	ND		1250
126-99-5	Chloroprene (2-Chloro-1,3-butadiene)	1	ND		6250
124-48-1	Dibromochloromethane	1	ND		625
79-03-2	1,2-Dibromo-3-chloropropane (DBCP)	1	ND		625
79-03-2	1,2-Dibromoethane (Ethylene dibromide)	1	ND		625
79-03-2	Dibromomethane (Methylene bromide)	1	ND		625
110-57-6	trans-1,4-Dichloro-2-butene	1	ND		625
75-71-8	Dichlorodifluoromethane (Freon 12)	1	ND		6250
75-72-3	1,1-Dichloroethane	1	ND		625
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		625
75-35-4	1,1-Dichloroethene (Dichloroethylene)	1	ND		625
134-69-3	trans-1,2-Dichloroethene	1	ND		625
75-37-5	1,2-Dichloropropane	1	ND		625
10061-01-5	cis-1,3-Dichloropropene	1	ND		625
10061-02-6	trans-1,3-Dichloropropene	1	ND		625
123-91-1	1,4-Dioxane	1	ND		62500
100-41-4	Ethylbenzene	1	ND		625
591-78-6	2-Hexanone	1	ND		1250
74-88-4	Iodomethane (Methyl iodide)	1	ND		625
78-53-1	2-Methyl-1-propanol (iso-Butyl alcohol)	1	ND		62500
126-98-7	Methacrylonitrile	1	ND		625
75-49-2	Methylene chloride (Dichloromethane)	1	ND		625
108-10-1	4-Methyl-2-pentanone (MIBK)	1	ND		1250
107-12-0	Propionitrile (Ethyl cyanide)	1	ND		1250

ND denotes Not Detected at or above the reporting limit.

DF denotes Dilution Factor.

RL denotes sample Reporting Limit.

Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10-2 98 17 40:01

Report of Method Blank
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Lab ID: 27734B1M15Description: Med Soil Method BlankEpisode: OGO% Moisture: n/aMethod: Med Soil GC/MS Volatile OrganicsBatch: 27734Units: ug/kgPrep Factor: 1Leached: n/a

Prepared:

Analyzed: 15-Sep-98 16:35 DE

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
100-42-5	Styrene	1	ND		625
630-20-6	1,1,1,2-Tetrachloroethane	1	ND		625
79-34-5	1,1,2,2-Tetrachloroethane	1	ND		625
127-18-4	Tetrachloroethene (Perchloroethylene)	1	ND		625
108-88-3	Toluene	1	ND		625
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	1	ND		625
79-00-5	1,1,2-Trichloroethane	1	ND		625
79-01-6	Trichloroethene (Trichloroethylene)	1	ND		625
75-69-1	Trichlorofluoromethane (Freon 11)	1	ND		625
96-18-4	1,2,3-Trichloropropane	1	ND		625
108-40-5	Vinyl acetate	1	ND		1250
75-01-1	Vinyl chloride (Chloroethene)	1	ND		1250
1330-20-7	Xylene (total)	1	ND		625

52 compound(s) reported

ND denotes Not Detected at or above the reporting limit.

DF denotes Dilution Factor.

RL denotes sample Reporting Limit.

Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10/2/98 17:40:01

Report of Method Blank

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Lab ID: 27734BA245KDescription: Med Soil Method BlankEpisode: OGO% Moisture: n/aMethod: Med Soil GC/MS Volatile OrganicsBatch: 27734Units: ug/kgPrep Factor: 1Leached: n/aPrepared: 24-Sep-98Analyzed: 24-Sep-98 17:29 DE

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
71-43-2	Benzene	1	ND		625
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		1250
75-15-0	Carbon disulfide	1	ND		625
108-90-7	Chlorobenzene	1	ND		625
67-66-3	Chloroform	1	ND		625
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	1	ND		625
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		625
123-91-1	1,4-Dioxane	1	ND		62500
100-41-4	Ethylbenzene	1	ND		625
100-42-5	Styrene	1	ND		625
108-38-3	Toluene	1	ND		625
1330-20-7	Xylene (total)	1	ND		625

12 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
 DF denotes Dilution Factor.
 RL denotes sample Reporting Limit.
 Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10/2/98 17:40:01

Report of Method Blank

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Lab ID: 27734BA17Description: Med Soil Method BlankEpisode: OGO% Moisture: n/aMethod: Med Soil GC/MS Volatile OrganicsBatch: 27734Units: ug/kgPrep Factor: 1Leached: n/a

Prepared:

Analyzed: 17-Sep-98 11:34 DE

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
67-64-1	Acetone (2-Propanone, Dimethyl ketone)	1	ND		1250
71-43-2	Benzene	1	ND		625
75-27-4	Bromodichloromethane	1	ND		625
75-25-2	Bromoform	1	ND		625
74-83-9	Bromomethane (Methyl bromide)	1	ND		1250
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		1250
75-15-0	Carbon disulfide	1	ND		625
56-23-5	Carbon tetrachloride	1	ND		625
108-90-7	Chlorobenzene	1	ND		625
75-00-3	Chloroethane	1	ND		1250
67-66-3	Chloroform	1	ND		625
74-87-3	Chloromethane (Methyl chloride)	1	ND		1250
124-48-1	Dibromochloromethane	1	ND		625
75-34-3	1,1-Dichloroethane	1	ND		625
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		625
75-35-4	1,1-Dichloroethene (Dichloroethylene)	1	ND		625
341-97-4	1,2-Dichloroethene (total)	1	ND		625
75-57-5	1,2-Dichloropropane	1	ND		625
106-66-7	cis-1,3-Dichloropropene	1	ND		625
106-67-2	trans-1,3-Dichloropropene	1	ND		625
74-11-4	Ethylbenzene	1	ND		625
59-17-8	2-Hexanone	1	ND		1250
75-00-2	Methylene chloride (Dichloromethane)	1	2290		625
108-91-1	4-Methyl-2-pentanone (MIBK)	1	ND		1250
100-42-5	Styrene	1	ND		625
74-34-5	1,1,2,2-Tetrachloroethane	1	ND		625
127-18-4	Tetrachloroethene (Perchloroethylene)	1	ND		625
105-85-5	Toluene	1	ND		625
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	1	ND		625
79-06-5	1,1,2-Trichloroethane	1	ND		625
79-07-6	Trichloroethene (Trichloroethylene)	1	ND		625
75-01-4	Vinyl chloride (Chloroethene)	1	ND		1250
1330-20-7	Xylene (total)	1	ND		625

33 compound(s) reported

ND denotes Not Detected at or above the reporting limit.

DF denotes Dilution Factor.

RL denotes sample Reporting Limit.

Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10 SEP 17 40 02

Report of Method Blank
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Lab ID: 27818B1Description: Med Soil Method BlankEpisode: OGO% Moisture: n/aMethod: Med Soil GC/MS Semivolatile OrganicsBatch: 27818Units: ug/kgPrep Factor: 1Leached: n/aPrepared: 22-Sep-98Analyzed: 30-Sep-98 14:28 JA

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
83-32-9	Acenaphthene	1	ND		10000
208-96-8	Acenaphthylene	1	ND		10000
65-85-0	Benzoic acid	1	ND		25000
191-24-2	Benzo(g,h,i)perylene	1	ND		10000
100-51-6	Benzyl alcohol	1	ND		10000
101-55-3	4-Bromophenyl phenyl ether	1	ND		10000
106-47-8	4-Chloroaniline (p-Chloroaniline)	1	ND		10000
111-91-1	bis(2-Chloroethoxy)methane	1	ND		10000
111-41-2	bis(2-Chloroethyl) ether	1	ND		10000
108-60-1	bis(2-Chloroisopropyl) ether	1	ND		10000
59-50-7	4-Chloro-3-methylphenol (p-Chloro-m-cresol)	1	ND		10000
91-58-7	2-Chloronaphthalene	1	ND		10000
95-57-8	2-Chlorophenol (o-Chlorophenol)	1	ND		10000
7005-72-3	4-Chlorophenyl phenyl ether	1	ND		10000
122-64-9	Dibenzofuran	1	ND		10000
91-04-1	3,3'-Dichlorobenzidine	1	ND		20000
120-83-2	2,4-Dichlorophenol	1	ND		10000
534-52-1	4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol)	1	ND		25000
121-14-2	2,4-Dinitrotoluene	1	ND		10000
690-20-2	2,6-Dinitrotoluene	1	ND		10000
86-73-7	Fluorene	1	ND		10000
118-74-1	Hexachlorobenzene	1	ND		10000
57-98-3	Hexachlorobutadiene	1	ND		10000
77-47-3	Hexachlorocyclopentadiene	1	ND		10000
67-72-1	Hexachloroethane	1	ND		10000
149-30-5	Indeno(1,2,3-cd)pyrene	1	ND		10000
78-59-1	Isophorone	1	ND		10000
91-57-6	2-Methylnaphthalene	1	ND		10000
53-74-2	2-Nitroaniline (o-Nitroaniline)	1	ND		25000
90-09-2	3-Nitroaniline (m-Nitroaniline)	1	ND		25000
100-01-6	4-Nitroaniline (p-Nitroaniline)	1	ND		25000
98-95-3	Nitrobenzene	1	ND		10000
88-75-5	2-Nitrophenol (o-Nitrophenol)	1	ND		10000
36-30-6	N-Nitrosodiphenylamine (Diphenylamine)	1	ND	A10	10000
621-64-7	N-Nitroso-di-n-propylamine	1	ND		10000
87-86-3	Pentachlorophenol	1	ND		25000
120-82-1	1,2,4-Trichlorobenzene	1	ND		10000
95-93-4	2,4,6-Trichlorophenol	1	ND		25000
88-06-2	2,4,6-Trichlorophenol	1	ND		10000

ND denotes Not Detected at or above the reporting limit.

DF denotes Dilution Factor.

RL denotes sample Reporting Limit.

Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10-2-98 17:40:02

Report of Method Blank
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Lab ID: 27818B1

Description: Med Soil Method Blank

Episode: OGQ

% Moisture: n/a

Method: Med Soil GC/MS Semivolatile Organics

Batch: 27818

Units: ug/kg

Prep Factor: 1

Leached: n/a

Prepared: 22-Sep-98

Analyzed: 30-Sep-98 14:28 JA

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
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39 compound(s) reported

Report of Method Blank

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Lab ID: 27818B1Description: Med Soil Method BlankEpisode: OGQ% Moisture: n/aMethod: Med Soil GC/MS Semivolatile OrganicsBatch: 27818Units: ug/kgPrep Factor: 1Leached: n/aPrepared: 22-Sep-98Analyzed: 30-Sep-98 14:28 JA

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
120-12-7	Anthracene	1	ND		10000
108-98-6	Benzenethiol (Thiophenol)	1	ND		10000
56-55-3	Benzo(a)anthracene	1	ND		10000
205-99-2	Benzo(b)fluoranthene	1	ND		10000
207-08-09	Benzo(k)fluoranthene	1	ND		10000
50-32-8	Benzo(a)pyrene	1	ND		10000
35-68-7	Butylbenzylphthalate	1	ND		10000
218-01-9	Chrysene	1	ND		10000
224-42-0	Dibenz(a,h)acridine	1	ND		10000
53-70-3	Dibenz(a,h)anthracene	1	ND		10000
54-74-2	Di-n-butylphthalate	1	ND		10000
95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	1	ND		10000
94-73-1	1,3-Dichlorobenzene (m-Dichlorobenzene)	1	ND		10000
106-46-7	1,4-Dichlorobenzene (p-Dichlorobenzene)	1	ND		10000
54-99-2	Diethylphthalate	1	ND		10000
57-87-6	7,12-Dimethylbenzo(a)anthracene	1	ND		10000
135-67-6	2,4-Dimethylphenol	1	ND		10000
131-11-3	Dimethylphthalate	1	ND		10000
51-21-5	2,4-Dimethylphenol	1	ND		25000
70-41-1	Dioctylphthalate	1	ND		10000
174-17-5	Diisobutylphthalate	1	ND		10000
216-23-1	Fluoranthene	1	ND		10000
95-13-6	Indene	1	ND		10000
Unknown	Methyl styrene	1	ND	A+	10000
90-12-0	1-Methylnaphthalene	1	ND		10000
95-45-7	2-Methylphenol (o-Cresol)	1	ND		10000
105-14-4	3-Methylphenol (m-Cresol)	1	ND	A+	10000
105-62-3	4-Methylphenol (p-Cresol)	1	ND		10000
84-21-3	Naphthalene	1	ND		10000
100-02-7	4-Nitrophenol (p-Nitrophenol)	1	ND		25000
55-01-5	Phenanthrene	1	ND		10000
108-95-2	Phenol	1	ND		10000
129-00-0	Pyrene	1	ND		10000
110-86-1	Pyridine	1	ND		10000
91-22-5	Quinoline	1	ND		10000

35 compounds reported

ND denotes Not Detected at or above the reporting limit.

DF denotes Dilution Factor.

RL denotes sample Reporting Limit.

Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10-2-98 17:40:22

Report of Method Blank

Pace Analytical Services, Inc. - New Orleans

Organic Protocol - Single Batch

Lab ID: 27734B1A18Description: Water Method BlankEpisode: OGO% Moisture: n/aMethod: Water GC/MS Volatile OrganicsBatch: 27734Units: ug/lPrep Factor: 125Leached: n/aPrepared: 18-Sep-98Analyzed: 18-Sep-98 16:50 DE

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
67-64-1	Acetone (2-Propanone, Dimethyl ketone)	1	ND		1250
71-43-2	Benzene	1	ND		625
75-27-4	Bromodichloromethane	1	ND		625
75-25-2	Bromoform	1	ND		625
74-83-9	Bromomethane (Methyl bromide)	1	ND		1250
78-93-3	2-Butanone (Methyl ethyl ketone)	1	ND		1250
75-13-0	Carbon disulfide	1	ND		625
56-23-5	Carbon tetrachloride	1	ND		625
108-90-7	Chlorobenzene	1	ND		625
75-00-3	Chloroethane	1	ND		1250
67-66-3	Chloroform	1	ND		625
74-87-3	Chloromethane (Methyl chloride)	1	ND		1250
124-48-1	Dibromochloromethane	1	ND		625
75-34-3	1,1-Dichloroethane	1	ND		625
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1	ND		625
75-35-4	1,1-Dichloroethene (Dichloroethylene)	1	ND		625
500-54-0	1,2-Dichloroethene (total)	1	ND		625
75-37-3	1,2-Dichloropropane	1	ND		625
107-06-2	cis-1,2-Dichloropropene	1	ND		625
107-06-2	trans-1,2-Dichloropropene	1	ND		625
100-41-4	Ethylbenzene	1	ND		625
54-17-5	2-Hexanone	1	ND		1250
75-09-2	Methylene chloride (Dichloromethane)	1	ND		625
108-10-1	4-Methyl-2-pentanone (MIBK)	1	ND		1250
100-42-5	Styrene	1	ND		625
79-34-5	1,1,1,2-Tetrachloroethane	1	ND		625
127-18-4	Tetrachloroethene (Perchloroethylene)	1	ND		625
105-85-2	Toluene	1	ND		625
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	1	ND		625
79-09-5	1,1,2-Trichloroethane	1	ND		625
79-01-6	Trichloroethene (Trichloroethylene)	1	ND		625
75-01-4	Vinyl chloride (Chloroethene)	1	ND		1250
1330-20-7	Xylene (total)	1	ND		625

JJ compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.

RL denotes Sample Reporting Limit.

Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10:29 AM 11-30-02

Report of Quality Control
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Method: <u>Low Soil GC Extractable TPH</u>				Episode: <u>OGQ</u>				Batch: <u>27808</u>				Units: <u>mg/kg</u>	
Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	MS Spike	MS %Rec	MSD %Rec	RPD %	QC Limits		RPD Max	Qu		
TPH - Diesel Range Organics	50.0	93		50.0	108	104	4	50-150	50-150	50			
1 compound(s) reported													

* denotes recovery outside of QC limits.
MS spike concentrations are not corrected for moisture content of the spiked sample.

Report of Quality Control
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Method: <u>Med Soil GC Purgeable TPH</u>				Episode: <u>OGO</u>				Batch: <u>27892</u>				Units: <u>ug/kg</u>			
Parameter Name	LCS Spike	LCS %Rec	LCSD %Rec	MS Spike	MS %Rec	MSD %Rec	RPD %	QC Limits		RPD Max	Qu				
TPH - Gasoline Range Organics	50000	102		50000	48 *	53	16	50-150	50-150	50	Q1				
1 compound(s) reported															

* denotes recovery outside of QC limits.

MS spike concentrations are not corrected for moisture content of the spiked sample.

Report of Batch Surrogate Recovery
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Method: Low Soil GC Extractable TPHEpisode: OGOBatch: 27808

Lab ID	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
27808B1	120							
27808B2	119							
27808MS	117							
27808MSD	111							
27808S1	106							
OGQ-001	171 GI							
OGQ-002	104							
OGQ-003	78							
OGQ-004	89							
OHF-001	94							
OHF-002	75							
OHF-003	104							
OHF-004	119							
OHF-005	110							
OHF-006	104							
OHF-007	119							

QC limits: 40 - 150

Sur 1: n-Pentacosane (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.

A Lab ID consisting of a batch number with a B suffix is a method blank.

A Lab ID consisting of a batch number with a S suffix is an LCS.

A Lab ID with a MS suffix is a matrix spike.

A Lab ID with a MSD suffix is a matrix spike duplicate.

10/2/95 10:17 AM

Report of Batch Surrogate Recovery
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Method: Med Soil GC Purgeable TPHEpisode: OGQBatch: 27892

Lab ID	Sur 1 %Rec	Sur 2 %Rec	Sur 3 %Rec	Sur 4 %Rec	Sur 5 %Rec	Sur 6 %Rec	Sur 7 %Rec	Sur 8 %Rec
27892BI	104							
27892MS	63							
27892MSD	64							
27892SI	99							
OGQ-001	119							
OGQ-002	70							
OGQ-003	61							
OGQ-004	71							
QC limits:	40 - 150							

Sur 1: 1,2,4-Trichlorobenzene (S)

* denotes surrogate recovery outside of QC limits.

D denotes surrogate recovery is outside of QC limits due to sample dilution, and is not considered an excursion.

A Lab ID consisting of a batch number with a B suffix is a method blank.

A Lab ID consisting of a batch number with a S suffix is an LCS.

A Lab ID with a MS suffix is a matrix spike.

A Lab ID with a MSD suffix is a matrix spike duplicate.

10:29:12 11/29

Report of Method Blank
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Lab ID: 27808B1

Description: Low Soil Method Blank

Episode: OGO

% Moisture: n/a

Method: Low Soil GC Extractable TPH

Batch: 27808

Units: mg/kg

Prep Factor: 1

Leached: n/a

Prepared: 22-Sep-98

Analyzed: 22-Sep-98 21:08 LSK

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
n/a	TPH - Diesel Range Organics	1	ND		10.0
n/a	TPH - Oil Range Organics	1	ND		50.0

1 compound(s) reported

Report of Method Blank
Pace Analytical Services, Inc. - New Orleans
Organic Protocol - Single Batch

Lab ID: 27892B1

Description: Med Soil Method Blank

Episode: OGO

% Moisture: n/a

Method: Med Soil GC Purgeable TPH

Batch: 27892

Units: ug/kg

Prep Factor: 1

Leached: n/a

Prepared: 30-Sep-98

Analyzed: 30-Sep-98 17:47 SLF

CAS Number	Parameter	Dilution	Result	Qu	Reporting Limit
n/a	TPH - Gasoline Range Organics	1	ND		5000

1 compound(s) reported

ND denotes Not Detected at or above the reporting limit.
DF denotes Dilution Factor.
RL denotes sample Reporting Limit.
Qu lists qualifiers. Specific qualifiers are defined at the end of the report.

10/2/98 13:17:21

Report of Quality Control
Pace Analytical Services, Inc. - New Orleans
Multiple Parameters - Multiple Batches

Episode: OGO

Parameter Name	Batch	Blank	Units	LCS	LCS	LCSD	MS	MS	MSD	Dup	QC Limits		RPD	Qu
				Spike	%Rec	%Rec	Spike	%Rec	%Rec	RPD	LCS	MS/MSD	Max	
Mercury	27767	ND	mg/kg	1.38	102		1.00	104			49-151	75-125	20	
Antimony	27768	ND	mg/kg	56.9	45		100	164 *	139 *		20-180	75-125	20	Q1
Arsenic	27768	ND	mg/kg	67.1	83		400	91	90		61-133	75-125	20	
Barium	27768	ND	mg/kg	106	75		400	63 *	65 *		56-143	75-125	20	Q1
Beryllium	27768	ND	mg/kg	41.6	75		10.0	72 *	73 *		70-130	75-125	20	Q1
Cadmium	27768	ND	mg/kg	71.1	73		10.0	78	76		55-145	75-125	20	
Chromium	27768	ND	mg/kg	76.4	81		40.0	311 *	241 *		69-131	75-125	20	Q1
Cobalt	27768	ND	mg/kg	116	80		100	85	83		63-136	75-125	20	
Copper	27768	ND	mg/kg	63.9	85		50.0	159 *	137 *		62-138	75-125	20	Q1
Iron	27768	ND	mg/kg	8070	60						43-157		20	
Lead	27768	ND	mg/kg	147	79		100	88	85		60-140	75-125	20	
Manganese	27768	ND	mg/kg	225	73		100	159 *	135 *		64-136	75-125	20	Q1
Nickel	27768	ND	mg/kg	120	83		100	114	102		67-133	75-125	20	
Potassium	27768	ND	mg/kg	4010	105						58-142		20	
Selenium	27768	ND	mg/kg	93.7	79		400	37	38		65-134	75-125	20	
Silver	27768	ND	mg/kg	50.5	74		10.0	70 *	72 *		56-144	75-125	20	Q1
Thallium	27768	ND	mg/kg	129	69		400	74 *	75		61-143	75-125	20	Q1
Vanadium	27768	ND	mg/kg	56.9	70		100	99	95		68-132	75-125	20	
Zinc	27768	ND	mg/kg	83.0	84		100	107 *	378 *		61-130	75-125	20	Q1

*Units: (ParaCode)11 "parameter(s) reported"
 * denotes recovery outside of QC limits.
 * spike amounts are not corrected for moisture content of the spiked sample.

10/2/95 12:17:54

Report of Quality Control
Pace Analytical Services, Inc. - New Orleans
Multiple Parameters - Multiple Batches

Episode: OGO

Parameter Name	Batch	Blank	Units	LCS	LCS	LCSD	MS	MS	MSD	Dup	QC Limits		RPD	Qu
				Spike	%Rec	%Rec	Spike	%Rec	%Rec	RPD	LCS	MS/MSD	Max	
Chloride	27391	ND	mg/kg	730	106		5000	106		0	80-120	75-125	20	
Total Solids	27336	ND	mg/l							14			2	

Count/ParaCode/11 "parameters reported"

" denotes recovery outside of QC limits.

Spike amounts are not corrected for moisture content of the spiked sample.

10-2-95 10:17:37

Report Qualifiers

Pace Analytical Services, Inc. - New Orleans

Single Episode

Episode: OGO

Qualifier	Qualifier Description
A17	There is no promulgated method for the analysis of soils. This water method was performed on an aqueous leachate of the soil.
A4	The concentration reported was based on the quantitation of the total area of the methyl 228 ion peaks and the relative response factor of n-methylchrysene.
A7	3-Methylphenol and 4-methylphenol coelute under the conditions used for analysis, therefore the precise isomer in the sample cannot be determined. The sample concentration is arbitrarily reported as 4-methylphenol.
C3	The result for this parameter is not corrected for moisture content.
D2	The analysis was performed at a dilution due to the presence of matrix interferences.
G1	Interferences are present which caused poor surrogate recovery.
M2	The sample required reanalysis due to internal standard response outside the QC limits. Reanalysis yielded similar results, indicating a sample matrix effect. The results reported are from the original analysis.
P5	A medium level preparation was performed based upon screening data on the nature of the sample matrix.
Q1	The matrix spike recoveries are poor. Acceptable method performance for this analyte has been demonstrated by the laboratory control sample recovery.

Pat Analytical

121888

CHAIN-OF-CUSTODY RECORD Analytical Request

Client: Star Enterprise
Address: P.O. Box 37
Convent, LA 70723
Phone: (225) 562-7681

Original to Star
Request to SEMS Inc. (copy)
Bill to: STAR ATTN: Accounts Receivable
P.O. #/Billing Reference: 98035343
Project Name / No Permit: P-020 Sampling

Page Client No. _____
Page Project Manager _____
Page Project No. _____
Requested Due Date: _____

Turn around Time
☐ 24 Hours
☐ 48 Hours
☐ 3-5 Days
☐ 1 Week
☒ 2 Weeks
☒ Normal

Sampled By (PRINT): Gary Boyd
Date Sampled: 9/16/98
Sampler Signature: [Signature]

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PAGE NO.	NO. OF CONTAINERS	UNRESERVED	PRESERVATIVES	ANALYSES REQUEST	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
1	South Pond	1245	sludge		3	X	H ₂ SO ₄ HNO ₃ VDA (HCL) NaOH		9/16	1350	Amanda Glynn/Star	9/16	1:50pm
2	AB1	1100							9/17	1400	Maureen Glynn/Star	9/17	1400
3	AB-2	1115							9/17	1500	Maureen Glynn/Star	9/17	1500
4	Final Settling Pond	1140											
5													
6													
7													
8													

SAMPLE CONDITION

Temp: _____ °C
Received on Ice: ☒ Y ☐ N
Sealed Container: ☒ Y ☐ N
Samples Intact: ☒ Y ☐ N

SEE REVERSE SIDE FOR INSTRUCTIONS

Additional Comments

SUMMARY OF BIOSLUDGE ANALYSES

1. "SKINNER LIST" of hazardous constituents for refinery wastes

A. Metals

1987 - The analyses that were run for metals showed that all the metal concentrations were below detection limits except for barium, chromium, lead, mercury and vanadium. Chromium showed the highest concentration level at 32.3 mg/kg.

1989 - The results indicated detectable amounts of barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, zinc and vanadium. Zinc had the highest concentration at 75 mg/kg.

B. Volatiles

1987 - All results indicated concentrations less than the detection limits.

1989 - All results indicated concentrations less than the detection limits.

C. Semivolatile Base/Neutral

1987 - All results indicated concentrations less than the detection limit.

1989 - All except diethyl phthalate indicated concentrations less than the detection limit. Diethyl phthalate had a concentration of 1.1 mg/kg.

D. Semivolatile Acid

1987 - All results indicated concentrations less than the detection limits.

1989 - All results indicated concentrations less than the detection limits.

2. INORGANICS

1987 - The following ranges were determined from the three samples analyzed in 1987. The percent water ranged between 97% and 98%. Ash ranged from 1.2% to 1.3% and solids from 2% to 3%. Soluble salts ranged from 224 mg/kg to 253 mg/kg, total nitrogen from 186 mg/kg to 407 mg/kg and total phosphorus from 3 mg/kg to 9 mg/kg. The pH range was from 6.8 to 6.9. Total organic carbon ranged from 1.0% to 1.2% and the volatile organic constituent ranged from 0.7% to 1.7%. The total extractable hydrocarbons range was from 200 mg/kg to 800

mg/kg, total organic halogens was from 280 mg/kg to 942 mg/kg and total metals were from <1.0 mg/kg to 1.2 mg/kg.

1989 - The 1989 sample was 12.1% water, 87% solids and 0.9% oil. The pH was 7.4. The chloride level was 273 mg/kg, total nitrogen was 156 mg/kg, total phosphorus and 2.0 mg/kg, total potassium was 64 mg/kg, total suspended solids was 35,400 mg/kg with total dissolved solids being less than 1.0 mg/kg. The oil and grease content was 9,137 mg/kg and the volatile suspended solids was 23,960 mg/kg.

3. HAZARDOUS CHARACTERISTICS

1987 - No tests were performed specifically for hazardous characteristics.

1989 - Ignitability was greater than 200°F and the corrosivity test indicated a pH of 7.4. The waste showed a mild reaction with acid and showed levels of sulfide at 32 mg/kg and cyanide at 0.6 mg/kg.

4. TCLP PROCEDURE - PESTICIDES

1987 - All results indicated concentrations less than the detection limits.

1989 - All results indicated concentrations less than the detection limits.

5. TCLP PROCEDURE - METALS

1987 - Only barium, chromium, lead and selenium had detectable concentrations. Of these selenium had the highest concentration of 1.0 ppm.

1989 - All test parameters showed less than detectable amounts except barium, cadmium and lead with barium having the highest concentration at 0.22 mg/L.

6. TCLP PROCEDURE - BASE NEUTRALS

1987 - All results indicated concentrations less than the detection limits.

1989 - All results indicated concentrations less than the detection limits.

7. TCLP PROCEDURE - ACID COMPOUNDS

1987 - All results indicated concentrations less than the detection limits.

1989 - All results indicated concentrations less than the detection limits.

8. TCLP PROCEDURE VOLATILE COMPOUNDS

1987 - All results indicated concentrations less than the detection limits.

1989 - All results indicated concentrations less than the detection limits.

9. Data is also presented in tabular form for tests conducted over a period from March 3, 1988 to April 11, 1988. Parameters analyzed and listed in this table include pH, TSS, VSS, VSS/TSS ratio, oil and grease, phosphate, sodium, oxygen uptake rate, and carbon, hydrogen and nitrogen ratios in dry weight percent.
10. Samples were collected on December 14, 1989 and a pathogen analysis was run. Samples were obtained upstream of the Aeration Basin and downstream of the Aerobic Digester. The salmonella analysis showed no presence in the inlet. Total coliform showed a reduction from 61,000/100 ml to <1/100 ml and fecal coliform showed a reduction from 52,000/100 ml to <1/100 ml. Results are included in tabular form.

SLUDGE ANALYSIS

FOR

TEXACO, U.S.A.
P. O. BOX 37
CONVENT, LA 70723

AUGUST 12, 1987
REPORT NO. 57-613

August 12, 1937
Report No. 87-619

Three samples of ASTL sludge were received on November 5, 1936. The samples were analyzed for the following test parameters as listed on the attached tables.

If you have any questions regarding these analyses, please do not hesitate to call us.

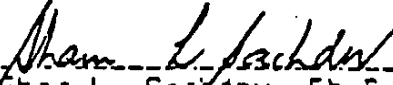

Sham L. Sackdev, Ph.D., CCH
President

TABLE 1

ASTU A1

11/03/92 1100

PARAMETER	CONCENTRATION
Water	97.0%
Ash	1.3%
Solids	3%
Soluble Salts	253 mg/kg
Total Nitrogen	247 mg/kg
Total Phosphorus	9 mg/kg
pH	6.9 units
Total Organic Carbon	1.2 %
Total Extractable Hydrocarbons	800 mg/kg
Total Metals	1.1 mg/kg
Total Organic Halogens	535 mg/kg
Volatile Organic Constituents	1.7%

Baton Rouge, LA 70816 • (504) 292-2900

TABLE 2

ASTU A3

11/03/88 1100

PARAMETERS	CONCENTRATION
Antimony	<0.5 mg/kg
Arsenic	<0.5 mg/kg
Barium	7.4 mg/kg
Beryllium	<0.5 mg/kg
Cadmium	<0.5 mg/kg
Chromium	26.0 mg/kg
Cobalt	<0.5 mg/kg
Lead	1.0 mg/kg
Mercury	0.17 mg/kg
Nickel	<0.5 mg/kg
Selenium	<0.5 mg/kg
Vanadium	3.4 mg/kg

Baton Rouge, LA 70816 • (504) 292-2900

TABLE 2

ASTU #1

11/03/86 1100

PARAMETERS	CONCENTRATION
Antimony	<0.5 mg/kg
Arsenic	<0.5 mg/kg
Barium	7.5 mg/kg
Beryllium	<0.5 mg/kg
Cadmium	<0.5 mg/kg
Chromium	32.3 mg/kg
Cobalt	<0.5 mg/kg
Lead	1.0 mg/kg
Mercury	0.13 mg/kg
Nickel	<0.5 mg/kg
Selenium	<0.5 mg/kg
Vanadium	2.4 mg/kg

TABLE 2

ASTU A2

11/03/96 1100

PARAMETERS	CONCENTRATION
Antimony	<0.5 mg/kg
Arsenic	<0.5 mg/kg
Barium	7.0 mg/kg
Beryllium	<0.5 mg/kg
Cadmium	<0.5 mg/kg
Chromium	24.0 mg/kg
Cobalt	<0.5 mg/kg
Lead	0.5 mg/kg
Mercury	0.12 mg/kg
Nickel	<0.5 mg/kg
Selenium	<0.5 mg/kg
Vanadium	2.2 mg/kg

Lafayette, LA 70510 • (504) 292-2900

TABLE 3

ASTU A1

11/03/85 1100

PARAMETERS	CONCENTRATION (ppb)
Benzo(a)pyrene	<10.0
Bis(2-ethyl hexyl)phthalate	<10.0
Chrysene	<10.0
Dibenz(a,h)airidine	<10.0
Dibenz(a,h)anthracene	<10.0
Diethylphthalate	<10.0
7,12-Dimethylbenz(a)anthracene	<10.0
Dimethyl phthalate	<10.0
Di(n)butyl phthalate	<10.0
Di(n)octyl phthalate	<10.0
Fluoranthene	<10.0
Indene	<10.0
Methyl chrysene	<10.0
1-methyl naphthalene	<10.0
Naphthalene	<1.0
Phenanthrene	<10.0
Pyrene	<10.0
Pyridine	<1.0
Quinoline	<1.0

TABLE 3

ASTJ A2

11/03/86 1100

PARAMETERS	CONCENTRATION (ug/kg)
Benzo(a)pyrene	<10.0
Bis(2-ethyl hexyl)phthalate	<10.0
Chrysene	<10.0
Dibenz(a,h)airidine	<10.0
Dibenz(a,h)anthracene	<10.0
Diethylpntthalate	<10.0
7,12-Dimethylbenz(a)anthracene	<10.0
Dimethyl phthalate	<10.0
Di(n)butyl phthalate	<10.0
Di(n)octyl phthalate	<10.0
Fluoranthene	<10.0
Indene	<10.0
Methyl chrysene	<10.0
1-methyl naphthalene	<10.0
Naphthalene	<1.0
Phenanthrene	<10.0
Pyrene	<10.0
Pyridine	<1.0
Quinoline	<1.0

TABLE 3

ASTU AD

11/03/81 1100

PARAMETERS	CONCENTRATION (ug/l)
Benzo(a)pyrene	<10.0
Bis(2-ethyl hexyl)phthalate	<10.0
Chrysene	<10.0
Dibenz(a,h)airidine	<10.0
Dibenz(a,h)anthracene	<10.0
Diethylphthalate	<10.0
7,12-Dimethylbenz(a)anthracene	<10.0
Dimethyl phthalate	<10.0
Di(n)butyl phthalate	<10.0
Di(n)octyl phthalate	<10.0
Fluoranthene	<10.0
Indene	<10.0
Methyl chrysene	<10.0
1-methyl naphthalene	<10.0
Naphthalene	<1.0
Phenanthrene	<10.0
Pyrene	<10.0
Pyridine	<1.0
Quinoline	<1.0

TABLE 3

ASTU A1

11/03/89 1100

PARAMETERS	CONCENTRATION (mg/l)
Benzene	<0.1
Carbon disulfide	<0.1
Chlorobenzene	<0.1
Chloroform	<0.1
1,2 Dichloroethane	<0.1
1,4 Dioxane	<1.0
Ethyl benzene	<0.1
Ethylene dibromide	<0.1
Methyl ethyl ketone	<0.1
Styrene	<0.1
Toluene	<0.1
Xylene	<0.1
Zincenethiol	<1.0
Cresols	<1.0
2,4-Dimethyl phenol	<1.0
2,4-Dinitrophenol	<1.0
4-Nitrophenol	<1.0
Phenol	<1.0
Anthracene	<10.0
Benzo(a)anthracene	<10.0
Benzo(b)fluoranthene	<10.0
Benzo(k)fluoranthene	<10.0

TABLE 3

ASTU #2

11/03/88 1100

PARAMETERS	CONCENTRATION (mg/l)
Benzene	<0.1
Carbon disulfide	<0.1
Chlorobenzene	<0.1
Chloroform	<0.1
1,2 Dichloroethane	<0.1
1,4 Dioxane	<1.0
Ethyl benzene	<0.1
Ethylene dibromide	<0.1
Methyl ethyl ketone	<0.1
Styrene	<0.1
Toluene	<0.1
Xylene	<0.1
Benzenethiol	<1.0
Cresols	<1.0
2,4-Dimethyl phenol	<1.0
2,4-Dinitrophenol	<1.0
4-Nitrophenol	<1.0
Phenol	<1.0
Anthracene	<10.0
Benzo(a)anthracene	<10.0
Benzo(b)fluoranthene	<10.0
Benzo(k)fluoranthene	<10.0

TABLE 3

ASTU 43

11/03/85 1100

PARAMETERS	CONCENTRATION (mg/L)
Benzene	<0.1
Carbon disulfide	<0.1
Chlorobenzene	<0.1
Chloroform	<0.1
1,2 Dichloroethane	<0.1
1,4 Dioxane	<1.0
Ethyl benzene	<0.1
Ethylene dibromide	<0.1
Methyl ethyl ketone	<0.1
Styrene	<0.1
Toluene	<0.1
Xylene	<0.1
Benzenethiol	<1.0
Cresols	<1.0
2,4-Dimethyl phenol	<1.0
2,4-Dinitrophenol	<1.0
4-Nitrophenol	<1.0
Phenol	<1.0
Anthracene	<10.0
Benzo(a)anthracene	<10.0
Benzo(b)fluoranthene	<10.0
Benzo(k)fluoranthene	<10.0

ENTEK

11646 Industriplex Blvd., Suite A-3
Baton Rouge, LA 70809 • (504) 293-2900

TCLP TOXICITY

FOR

TEXACO, USA
P. O. BOX 37
CONVENT, LA 70723

JANUARY 15, 1987

REPORT NO. 87-038


ENTEK

11646 Induscrpion Blvd., Suite A-3
Baton Rouge, LA 70809 • (504) 293-2900

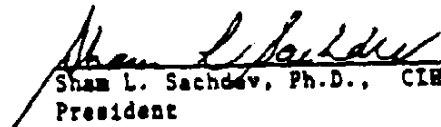
January 13, 1987

Three samples were received on 11/3/86 and analysed as per TCLP procedures for metals, base neutrals, acid phenols, volatiles and pesticides.

The results of the analyses are listed in the following tables. If you have any questions regarding these analyses, please do not hesitate to call.



Miriam Morales
Laboratory Supervisor



Sham L. Sachdev, Ph.D., CIH
President

ENTEK

11646 Induscrplex Blvd., Suite A-3
Baton Rouge, LA 70809 • (504) 292-2900

TCLP PROCEDURE**METALS**

All concentrations ppm

COMPOUND	ASTUA-1	ASTUA-2	ASTUA-3
Arsenic	<0.1	<0.1	<0.1
Barium	0.73	0.25	0.40
Cadmium	<0.1	<0.1	<0.1
Chromium	0.2	<0.1	<0.1
Lead	0.05	0.15	0.08
Mercury	<0.0005	<0.0005	<0.0005
Selenium	1.0	0.20	0.30
Silver	<0.1	<0.1	<0.1

ENVIER11646 Induscrip Blvd., Suite A-3
Baton Rouge, LA 70809 • (504) 293-2900**TCLP PROCEDURE****BASE NEUTRALS**All concentrations ppm

COMPOUND	ASTUA-1	ASTUA-2	ASTUA-3
2,4-Dinitrotoluene	<0.01	<0.01	<0.01
Hexachlorobenzene	<0.01	<0.01	<0.01
Hexachlorobutadiene	<0.01	<0.01	<0.01
Nitrobenzene	<0.01	<0.01	<0.01
Hexachloroethane	<0.01	<0.01	<0.01

ENTEK

11646 Industriale Blvd., Suite A-1
Baton Rouge, LA 70809 • (504) 292-2900

TCLP PROCEDURE**ACID COMPOUNDS**

All concentrations ppm

COMPOUND	ASTUA-1	ASTUA-2	ASTUA-3
Ortho-cresol	<0.01	<0.01	<0.01
Meta-cresol	<0.01	<0.01	<0.01
Para-cresol	<0.01	<0.01	<0.01
Pentachlorophenol	<0.01	<0.01	<0.01
Phenol	<0.01	<0.01	<0.01
2,3,4,6-Tetrachlorophenol	<0.01	<0.01	<0.01
2,4,5-Trichlorophenol	<0.01	<0.01	<0.01

ENTEK11646 Induscrapier Blvd., Suite A-3
Baton Rouge, LA 70809 • (504) 293-2900**TCLP PROCEDURE
VOLATILE COMPOUNDS**All concentrations ppm

COMPOUND	ASTUA-1	ASTUA-2	ASTUA-3
Acrylonitrile	<0.01	<0.01	<0.01
Benzene	<0.01	<0.01	<0.01
(Bis)2-Chloroethyl ether	<0.01	<0.01	<0.01
Carbon Disulfide	<0.01	<0.01	<0.01
Carbon Tetrachloride	<0.01	<0.01	<0.01
Chlorobenzene	<0.01	<0.01	<0.01
Chloroform	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	<0.01	<0.01	<0.01
1,4-Dichlorobenzene	<0.01	<0.01	<0.01
1,2-Dichloroethane	<0.01	<0.01	<0.01
1,1-Dichloroethylene	<0.01	<0.01	<0.01
Methylene Chloride	<0.01	<0.01	<0.01
Methylethyl Ketone	<0.01	<0.01	<0.01
Pyridine	<0.01	<0.01	<0.01
1,1,1,2-Tetrachloroethane	<0.01	<0.01	<0.01
1,1,2,2-Tetrachloroethane	<0.01	<0.01	<0.01
Tetrachloroethylene	<0.01	<0.01	<0.01

ENTEK11646 Lakeshore Blvd., Suite A-3
Baton Rouge, LA 70809 • (504) 292-2988**TCLP PROCEDURE
VOLATILE COMPOUNDS**All concentrations ppm

COMPOUND	ASTUA-1	ASTUA-2	ASTUA-3
Toluene	<0.01	<0.01	<0.01
1,1,1-Trichloroethane	<0.01	<0.01	<0.01
1,1,2-Trichloroethane	<0.01	<0.01	<0.01
Trichloroethylene	<0.01	<0.01	<0.01
Vinyl Chloride	<0.01	<0.01	<0.01

Collector's Sample No's ASTU A1 EN-15
A2 EN-
A3 -1-

CHAIN-OF-CUSTODY RECORD

SAMPLE COLLECTION:

Location of Sampling: ASTU
 Facility Type: Producer Hauler Disposal Site Y Other
 Collectors Name: J.J. Dolan Telephone: (504) 362-7691
 Company Name: TESALO REFINING & Marketing, Inc
 Address: P.O. Box 37, Convent, LA 70723
 Date Sampled: 11/3/86 Time: 1100
 Type of Process or Facility Sampled: Waste Water treatment plant
 Field Information: Analyze for Tier III & Table 2.2 per attachment
plus Xylene. Analyze for TCLP

SAMPLE SHIPPING (other than transportation by collector)

Transporters Name: Date: Time:
 Company Name:
 Address:

SAMPLE RECEIVING:

Person accepting sample Marian M. Murrell Date: 11/5/86 Time: 1400
 Company Name: ENTER LABORATORIES
 Address: Suite A-3, 11646 Industriplex Blvd., Baton Rouge, LA 70809
 Sample Disposition Storage Further Transportation Other Analyses

CHAIN-OF-POSSESSION: (Attach additional sheets as needed to show continuity)

TERMINATION OF CHAIN-OR-CUSTODY:

Authorized by: Date: Time:
 Company Name:
 Address:

ENTER

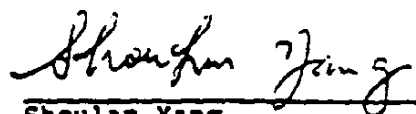
14285 Airline Hwy.
Baton Rouge, LA 70817 • (504) 293-2500

December 21, 1989

Project No.: 89-1350

One ASTU Digester Sludge sample was received December 6, 1989 to be analyzed for various parameters from Waste Constituents Determination analyses listing.

The results are attached. If you have any questions concerning these analyses, please do not hesitate to contact our office.



Shoulun Yang
Environmental Specialist

ENTEK14285 Airline Hwy.
Baton Rouge, LA 70817 • (504) 292-2900

December 21, 1989

Project No.: 89-1350

ASTU
DIGESTOR SLUDGE
12/06/89 0900QA/QC
(Obs/Act)ParameterMETALS (mg/Kg)

Antimony	<1.1	0.02/0.02
Arsenic	<1.1	0.02/0.02
Barium	11	0.900/0.945
Beryllium	<1.1	9.7/9.8
Cadmium	0.32	0.956/0.945
Chromium	0.7	0.5/0.5
Cobalt	3.2	0.05/0.05
Copper	2.1	0.789/0.945
Lead	4.3	0.902/0.900
Manganese	64	0.824/0.945
Mercury	0.043	0.0049/0.0050
Nickel	32	1.00/9.45
Selenium	<1.1	0.02/0.02
Zinc	75	0.977/0.945
Vanadium	27	0.32/0.30

VOLATILES (mg/Kg)

Benzene	<0.1	0.12/0.10
Carbon disulfide	<0.2	---/---
Chlorobenzene	<0.1	0.1/0.1
Chloroform	<0.1	---/---
1,2-Dichloroethane	<0.1	---/---
1,4-Dioxane	<0.1	---/---
Ethyl benzene	<0.1	0.14/0.10
Ethylene dibromide	<0.1	---/---
Methyl ethyl ketone	<0.1	---/---
Styrene	<0.1	0.1/0.1
Toluene	<0.1	0.13/0.10
Xylene	<0.1	0.12/0.10

SEMIVOLATILE BASE/NEUTRAL (mg/kg)
EXTRACTABLE COMPOUNDS

Anthracene	<1	45/50
Benzo (a) anthracene	<1	49/50
Benzo (b) fluoranthene	<1	50/50
Benzo (k) fluoranthene	<1	50/50
Benzo (a) pyrene	<1	49/50
Bis (2-ethylhexyl) phthalate	<1	48/50
Butyl benzyl phthalate	<1	51/50
Chrysene	<1	49/50

14285 Airline Hwy.
Baton Rouge, LA 70817 • Off: (504) 752-2900
Fax: (504) 756-2706

CORRECTED COPY

December 21, 1989

Project No.: 89-1350

Parameter	ATSU DIGESTOR SLUDGE 12/06/89 0900	QA/QC (Obs/Act)
<u>SEMIVOLATILE BASE/NEUTRAL (mg/Kg)</u> <u>EXTRACTABLE COMPOUNDS (CONT'D)</u>		
Dibenz (a,h) acridine	<1	---/---
Dibenz (a,h) anthracene	<1	---/---
Dichlorobenzenes	<1	---/---
Diethyl phthalate	1.1	47/50
7,12-Dimethylbenz (a) anthracene	<1	---/---
Dimethyl phthalate	<1	---/---
Di(n)-butyl phthalate	<1	50/50
Di(n)-octyl phthalate	<1	62/50
Fluoranthene	<1	---/---
Indene	<1	---/---
Methyl Chrysene	<1	---/---
1-Methyl naphthalene	<1	---/---
Naphthalene	<1	49/50
Phenanthrene	<1	49/50
Pyrene	<1	47/50
Pyridine	<1	---/---
Quinoline	<1	---/---
<u>SEMIVOLATILE ACID-EXTRACTABLE COMPOUNDS (mg/Kg)</u>		
Benzenethiol	<1	---/---
Cresols	<1	---/---
2,4-Dimethylphenol	<1	51/50
2,4-Dinitrophenol	<1	146/150
4-Nitrophenol	<1	52/50
Phenol	<1	---/---
<u>INORGANICS</u>		
pH (units)	7.4	5.9/6.0
Chloride (mg/Kg)	273	50/50
Total Kjeldahl Nitrogen (mg/Kg)	156	3.2/3.0
Total Phosphorus (PO ₄ -P) (mg/Kg)	2.0	0.52/0.50
Total Potassium (mg/Kg)	64	1.5/1.5
Oil and Grease (mg/Kg)	9,137	12.1/12.9
Oil (%)	0.9	---/---
Solids (%)	12.1	---/---
Water (%)	87	---/---
Total Dissolved Solids (mg/Kg)	<1.0	710/744
Total Suspended Solids (mg/Kg)	35,400	30/29
Volitale Suspended Solids (mg/Kg)	23,960	---/---

ENTER

14283 Airline Hwy.
Baton Rouge, LA 70817 • (504) 292-2908

December 21, 1989

Project No.: 89-1350

ASTU
DIGESTOR SLUDGE
12/06/89 0900

Parameter

(Obs/Act)

CHARACTERISTICS

Ignitability	>200 F	---/---
Corrosivity (pH)	7.4	5.9/6.0
Reactivity:		
Base	None	---/---
Water	None	---/---
Acid	Mild Reaction, Sample Released Sulfide	---/---
Sulfide (mg/Kg)	32	---/---
Cyanide (mg/Kg)	0.6	0.50/0.50

14223 Airline Hwy.
Baton Rouge, LA 70817 • (504) 293-2900

December 21, 1989

Project No.: 89-1350

TCLP ANALYSES
PESTICIDES

All concentrations mg/L

COMPOUND	ASTU DIGESTOR SLUDGE 12/06/89 0900	QA/QC (Observed/Actual)
Chlordane	<0.01	1.8/1.6
2,4-D	<0.1	1.56/1.83
Endrin	<0.001	---/---
Heptachlor	<0.001	0.75/1.00
Lindane	<0.01	0.88/1.00
Methoxychlor	<0.1	---/---
Toxaphene	<0.05	---/---
2,4,5-TP (Silvex)	<0.05	---/---

14285 Airline Hwy.
Baton Rouge, LA 70817 • (504) 292-2900

December 21, 1989

Project No.: 89-1350

TCLP PROCEDURE
BASE NEUTRALS

All concentrations mg/L

COMPOUND	ASTU	QA/QC (Observed/Actual)
	DIGESTOR SLUDGE 12/06/89 0900	
2,4-Dinitrotoluene	<0.01	39/50
Hexachlorobenzene	<0.01	58/50
Hexachlorobutadiene	<0.01	75/100
Nitrobenzene	<0.01	39/50
Hexachloroethane	<0.01	---/---

ENTEK14233 Airline Hwy.
Baton Rouge, LA 70817 • (504) 291-2500

December 21, 1989

Project No.: 89-1350

TCLP PROCEDURE
ACID COMPOUNDS

All concentrations mg/L

COMPOUND	ASTU DIGESTOR SLUDGE 12/06/89 0900	QA/QC (Actual/Observed)
Ortho-cresol	<0.01	---/---
Meta-cresol	<0.01	---/---
Para-cresol	<0.01	---/---
Pentachlorophenol	<0.01	218/150
Phenol	<0.01	---/---
2,3,4,6-Tetrachlorophenol	<0.01	---/---
2,4,5-Trichlorophenol	<0.01	140/150

ENTEK14225 Airline Hwy.
Baton Rouge, LA 70817 • (504) 292-2900December 21, 1989
Project No.: 89-1350TCLP PROCEDURE
VOLATILE COMPOUNDS

All concentrations mg/L

COMPOUND	ASTU	QA/QC (Observed/Actual)
	DIGESTOR SLUDGE 12/06/89 0900	
Acrylonitrile	<1.0	---/---
Benzene	<1.0	0.061/0.100
(Bis)2-Chloroethyl ether	<0.01	---/---
Carbon Disulfide	<0.01	0.12/0.10
Carbon Tetrachloride	<0.01	---/---
Chlorobenzene	<0.01	0.12/0.10
Chloroform	<0.01	0.060/0.080
1,2-Dichlorobenzene	<0.01	---/---
1,4-Dichlorobenzene	<0.01	---/---
1,2-Dichloroethane	<0.01	0.13/0.10
1,1-Dichloroethylene	<0.01	0.12/0.10
Methylene Chloride	<0.01	---/---
Methylethyl Ketone	<0.01	---/---
Pyridine	<0.01	---/---
1,1,1,2-Tetrachloroethane	<0.01	---/---
1,1,2,2-Tetrachloroethane	<0.01	---/---
Tetrachloroethylene	<0.01	---/---
Toluene	<0.01	0.1/0.1
1,1,1-Trichloroethane	<0.01	---/---
1,1,2-Trichloroethane	<0.01	---/---
Trichloroethylene	<0.01	0.066/0.080
Vinyl Chloride	<0.01	---/---

**Star Enterprise
Pathogen Analyses**

<u>Analyses</u>	<u>Inlet</u>	<u>Outlet</u>
Salmonella	0/100 ml	0/100 ml
Total Coliform	61,000/100 ml	<1/100 ml
Fecal Coliform	52,000/100 ml	<1/100 ml

CALCULATIONS AND SKETCHES

CLIENT STATE OF LOUISIANADESCRIPTION THE PLANT IS BEING DESIGNED FORHYDRAULIC LOADING RATE AND ADDITION OF A SECONDI. HYDRAULIC LOADING RATE (HLR):

THE CURRENT AEROBIC DIGESTER HAS A CAPACITY OF 12,090 BARRELS (BBL) AND IS OPERATED ON A 12-14 DAY RETENTION TIME. THE DIGESTER STABILIZES THE SLUDGE AND REDUCES THE QUANTITY OF SOLIDS PRODUCED. THE CURRENT MAXIMUM BIOSLUDGE GENERATION RATE IS 5,000 BBL/WEEK. WITH THE ADDITION OF A SECOND DIGESTER OF THE SAME CAPACITY, THE MAXIMUM BIOSLUDGE GENERATION RATE INCREASES TO $2 \times 5000 \text{ BBL} = 10,000 \text{ BBL/WEEK}$

$$\text{GENERATION RATE} = 10,000 \text{ BBL/WEEK}$$

∴

$$\begin{aligned} \text{HLR} &= 10,000 \text{ BBL/WK} \cdot \frac{42 \text{ GAL}}{1 \text{ BBL}} \cdot \frac{1 \text{ FT.}^3}{7.48 \text{ GAL}} \cdot \frac{12 \text{ IN.}}{1 \text{ FT.}} \cdot \frac{1 \text{ ACRE}}{43,560 \text{ FT.}^2} \\ &= 15.47 \text{ IN/WK/AC} \div 15 \text{ AC} \\ &= \underline{\underline{1.03 \text{ IN/WK/AC}}} \end{aligned}$$

II. APPLICATION RATE (AR) IN DRY TONS/WORK/ACRE

GIVEN:

GENERATION RATE = 10,000 BBL/WK
SLUDGE IS 3% SOLIDS BY WEIGHT
SLUDGE SP. GR. 1.08

∴

$$\begin{aligned} \text{AR (WT)} &= 10,000 \frac{\text{BBL}}{\text{WK}} \cdot \frac{42 \text{ GAL}}{1 \text{ BBL}} \cdot \frac{8.34 \text{ LB.}}{1 \text{ GAL}} \cdot 1.08 \cdot \frac{1}{15 \text{ AC}} \cdot \frac{1 \text{ TON}}{2000 \text{ LB.}} \\ &= 126.1 \text{ TNS/WK/AC.} \end{aligned}$$

ENVIRONMENTAL CONSULTANTS
BATON ROUGE, LOUISIANA

JOB NO. 57-216
BY JAC DATE 5-2
CHECKED AS DATE 5-2
PAGE 2 OF 2 REV

CALCULATIONS AND SKETCHES

CLIENT STUR ENTERPRISE

DESCRIPTION LANDFILL

HYDRAULIC LOADING AND EFFICIENCY RATES

SINCE SLUDGE IS 3% SOLIDS

$$\begin{aligned} LR(DRY) &= 126.1 \text{ TONS/WK/AL} \cdot 0.03 \\ &= \underline{\underline{3.78 \text{ DRY TONS/WK/AL}}} \end{aligned}$$

CONCLUSION:

SINCE HYDRAULIC LOADING RATE (0.03 IN./WK/AL)
IS < 2.0 IN./WK/AL THIS MEETS THE
REQUIREMENT OF LAC 33:YII.1305.H.1.1

APPENDIX H
LPDES PERMIT



State of Louisiana
Department of Environmental Quality



KATHLEEN BABINEAUX BLANCO
GOVERNOR

MAY 24 2004

MIKE D. McDANIEL, Ph.D.
SECRETARY

EPA Certified Mail 7003 2260 0006 0165 9065

Certified Mail 7003 2260 0006 0165 9058

File No.: LA0006041

AI No.: 2719

Activity No.: PER20020005

Mr. John Cancienne, Environmental Manager
 Motiva Enterprises LLC
 Convent Refinery
 Post Office Box 37
 Convent, Louisiana 70723

RE: Louisiana Pollutant Discharge Elimination System (LPDES) permit to discharge treated process wastewater associated with petroleum refinery activities, process and non-process stormwater, sanitary wastewater and utility wastewater to the Mississippi River (Outfalls 001 and 003) and Lake Pontchartrain via St. James Canal (Outfall 002) from an existing petroleum refinery facility located on Louisiana Highway 44 at Louisiana Highway 70 in Union, St. James Parish.

Dear Mr. Cancienne:

This Office has received and evaluated comments submitted by Motiva Enterprises LLC in response to the public notice published in the Office of Environmental Services Public Notice Mailing List on February 11, 2004, and the NEWS-EXAMINER of Litcher on February 12, 2004. The Office's response to comments submitted by Motiva Enterprises LLC have been addressed in a separate letter. No comments have been received from the general public.

Pursuant to the Clean Water Act (33 U.S.C. 1251 *et seq.*), and the Louisiana Environmental Quality Act (La. R.S. 30:2001, *et seq.*), the attached LPDES permit has been issued. Provisions of this permit may be appealed in writing pursuant to La. R.S. 2024(A) within 30 days from receipt of the permit. Only those provisions specifically appealed will be suspended by a request for hearing unless the secretary or the assistant secretary elects to suspend other provision(s) as well. A request for hearing must be sent to the following:

Louisiana Department of Environmental Quality
 Office of the Secretary
 Attention: Hearings Clerk, Legal Division
 Post Office Box 4302
 Baton Rouge, Louisiana 70821-4302

This permit shall replace the previously effective EPA (NPDES) permit and the State (LWDPS) permit, WP 0406. All future correspondence regarding this permit shall use the Agency Interest (AI) number 2719 and LPDES permit number LA0006041.



OFFICE OF ENVIRONMENTAL SERVICES • P.O. BOX 4313 • BATON ROUGE, LOUISIANA 70821-4313

AN EQUAL OPPORTUNITY EMPLOYER



Motiva Enterprises LLC
RE: LA0006041, AI No. 2719
Page 2

Monitoring results should be reported on a Discharge Monitoring Report (DMR) form per the schedule specified. A copy of the form to be used is attached for your convenience. Copies to be submitted to the regional office should be sent to the Capital Regional Office, Office of Environmental Compliance, Post Office Box 4312, Baton Rouge, Louisiana 70821-4312.

Please note that the State has renumbered the regulations in the Environmental Regulatory Code (ERC). These regulation changes have been incorporated into this final permit. A Renumbering Equivalency Chart for the references to the ERC has been included behind the DMRs in this package.

Should you have any questions concerning any part of the permit, please feel free to contact Heather Babin of the Office of Environmental Services at the address on the preceding page or telephone (225) 219-3138.

Sincerely,



Karen K. Gautreaux
Deputy Secretary

hb

Attachments

c: cover letter and permit:

Ms. Evelyn Rosborough (6WQ-CA)
U. S. Environmental Protection
Agency, Region VI (by Certified Mail)

Mr. Michael Moe
SAIC
2501 Liberty Parkway, Suite 500
Midwest City, OK 73110

Permit Compliance Unit
Office of Environmental Compliance

Heather Babin
Permits Division

IO-W File

c: cover letter only

Scott Guilliams
Permits Division

**Title 33
ENVIRONMENTAL QUALITY
Part IX. Water Quality**

Renumbering Equivalency Chart

Previous Number	Current or New Number
Subpart 1. Water Pollution Control	
	Subpart 1. Water Pollution Control
Chapter 1. General Provisions	Chapter 1. General Provisions
Chapter 3. Permits	Chapter 3. Permits
§301. Scope	§301. Scope
§303. Permit Application Information	§303. Permit Application Information
§305. Permit Limitations and Other Requirements	§305. Permit Limitations and Other Requirements
§307. Modification, Revocation and Reissuance	§307. Modification, Revocation and Reissuance
§309. Renewal and Termination	§309. Renewal and Termination
§311. Standard Permit Conditions	§311. Standard Permit Conditions
§313. Fact Sheets	§313. Fact Sheets
§315. Public Information	§315. Public Information
§317. Special Permits/Programs	§317. Special Permits/Programs
Appendix A. Primary Industry Categories	§319. Appendix A—Primary Industry Categories
Appendix B. Criteria for Determining a Concentrated Animal Feeding Operation	§321. Appendix B—Criteria for Determining a Concentrated Animal Feeding Operation
Appendix C. Criteria for Determining a Concentrated Aquatic Animal Production Facility	§323. Appendix C—Criteria for Determining a Concentrated Aquatic Animal Production Facility
Appendix D. Permit Application Testing Requirements	§325. Appendix D—Permit Application Testing Requirements
Chapter 5. Enforcement	Chapter 5. Enforcement
Chapter 7. Effluent Standards	Chapter 7. Effluent Standards
Chapter 9. Spill Prevention and Control	Chapter 9. Spill Prevention and Control
Chapter 11. Surface Water Quality Standards	Chapter 11. Surface Water Quality Standards
Chapter 13. Louisiana Water Pollution Control Fee System Regulation	Chapter 13. Louisiana Water Pollution Control Fee System Regulation
Chapter 15. Water Quality Certification Procedures	Chapter 15. Water Quality Certification Procedures
Chapter 17. Disposal of Waste Oil, Oil Field Brine, and All Other Materials Resulting from the Drilling for, Production of, or Transportation of Oil, Gas or Sulfur (As amended January 27, 1953)	Chapter 17. Disposal of Waste Oil, Oil Field Brine, and All Other Materials Resulting from the Drilling for, Production of, or Transportation of Oil, Gas or Sulfur (As amended January 27, 1953)
Chapter 19. State of Louisiana Stream Control Commission	Chapter 19. State of Louisiana Stream Control Commission
Chapter 21. Municipal Facilities Revolving Loan Fund	Chapter 21. Municipal Facilities Revolving Loan Fund
Chapter 22. Drinking Water Revolving Loan Fund	Chapter 22. Drinking Water Revolving Loan Fund
Subpart 2. The Louisiana Pollutant Discharge Elimination System (LPDES) Program	
Chapter 23. The LPDES Program	Subpart 2. The Louisiana Pollutant Discharge Elimination System (LPDES) Program
Subchapter A. Definitions and General Program Requirements	Chapter 23. Definitions and General LPDES Program Requirements
§2301. General Conditions	§2301. General Conditions
§2311. Purpose and Scope	§2311. Purpose and Scope
§2313. Definitions	§2313. Definitions

Previous Number	Current or New Number
§2315. Exclusions	§2315. Exclusions
§2317. Prohibitions	§2317. Prohibitions
§2319. Effect of a Permit	§2319. Effect of a Permit
§2321. Continuation of Expiring Permits	§2321. Continuation of Expiring Permits
§2323. Confidentiality of Information	§2323. Confidentiality of Information
Subchapter B. Permit Application and Special LPDES Program Requirements	Chapter 25. Permit Application and Special LPDES Program Requirements
§2331. Application for a Permit	§2501. Application for a Permit
§2333. Signatories to Permit Applications and Reports	§2503. Signatories to Permit Applications and Reports
§2335. Concentrated Animal Feeding Operations	§2505. Concentrated Animal Feeding Operations
§2337. Concentrated Aquatic Animal Production Facilities	§2507. Concentrated Aquatic Animal Production Facilities
§2339. Aquaculture Projects	§2509. Aquaculture Projects
§2341. Storm Water Discharges	§2511. Storm Water Discharges
§2343. Silvicultural Activities	§2513. Silvicultural Activities
§2345. General Permits	§2515. General Permits
§2346. What Are the Objectives of the Storm Water Regulations for Small MS4s?	§2517. What Are the Objectives of the Storm Water Regulations for Small MS4s?
§2347. As an Operator of a Small MS4, Am I Regulated under the LPDES Storm Water Project?	§2519. As an Operator of a Small MS4, Am I Regulated under the LPDES Storm Water Project?
§2348. If I Am an Operator of a Regulated Small MS4, How Do I Apply for an LPDES Permit and When Do I Have to Apply?	§2521. If I Am an Operator of a Regulated Small MS4, How Do I Apply for an LPDES Permit and When Do I Have to Apply?
§2349. As an Operator of a Regulated Small MS4, What Will My LPDES MS4 Storm Water Permit Require?	§2523. As an Operator of a Regulated Small MS4, What Will My LPDES MS4 Storm Water Permit Require?
§2350. As an Operator of a Regulated Small MS4, May I Share the Responsibility to Implement the Minimum Control Measures with Other Entities?	§2525. As an Operator of a Regulated Small MS4, May I Share the Responsibility to Implement the Minimum Control Measures with Other Entities?
§2351. As an Operator of a Regulated Small MS4, What Happens if I Don't Comply with the Application or Permit Requirements in LAC 33:IX.2348-50?	§2527. As an Operator of a Regulated Small MS4, What Happens if I Don't Comply with the Application or Permit Requirements in LAC 33:IX.2521-2525?
§2352. Will the Small MS4 Storm Water Program Regulations at LAC 33:IX.2347-2351 Change in the Future?	§2529. Will the Small MS4 Storm Water Program Regulations at LAC 33:IX.2519-2527 Change in the Future?
Subchapter C. Permit Conditions	Chapter 27. LPDES Permit Conditions
§2355. Conditions Applicable to All Permits	§2701. Conditions Applicable to All Permits
§2357. Additional Conditions Applicable to Specified Categories of LPDES Permits	§2703. Additional Conditions Applicable to Specified Categories of LPDES Permits
§2359. Establishing Permit Conditions	§2705. Establishing Permit Conditions
§2361. Establishing Limitations, Standards, and Other Permit Conditions	§2707. Establishing Limitations, Standards, and Other Permit Conditions
§2363. Calculating LPDES Permit Conditions	§2709. Calculating LPDES Permit Conditions
§2365. Duration of Permits	§2711. Duration of Permits
§2367. Schedules of Compliance	§2713. Schedules of Compliance
§2369. Requirements for Recording and Reporting of Monitoring Results	§2715. Requirements for Recording and Reporting of Monitoring Results
§2371. Disposal of Pollutants into Wells, Publicly Owned Treatment Works or by Land Application	§2717. Disposal of Pollutants into Wells, Publicly Owned Treatment Works or by Land Application
Subchapter D. Transfer, Modification, Revocation and Reissuance, and Termination of Permits	Chapter 29. Transfer, Modification, Revocation and Reissuance, and Termination of LPDES Permits
§2381. Transfer of Permits	§2901. Transfer of Permits
§2383. Modification or Revocation and Reissuance of Permits	§2903. Modification or Revocation and Reissuance of Permits
§2385. Minor Modifications of Permits	§2905. Minor Modifications of Permits
§2387. Termination of Permits	§2907. Termination of Permits

Previous Number	Current or New Number
Subchapter E. General Program Requirements	Chapter 31. General LPDES Program Requirements
§2403. Definitions	§3101. Definitions
§2405. Application for a Permit	§3103. Application for a Permit
§2407. Modification, Revocation and Reissuance, or Termination of Permits	§3105. Modification, Revocation and Reissuance, or Termination of Permits
§2409. Draft Permits	§3107. Draft Permits
§2411. Statement of Basis	§3109. Statement of Basis
§2413. Fact Sheet	§3111. Fact Sheet
§2415. Public Notice of Permit Actions and Public Comment Period	§3113. Public Notice of Permit Actions and Public Comment Period
§2417. Public Comments and Requests for Public Hearings	§3115. Public Comments and Requests for Public Hearings
§2419. Public Hearings	§3117. Public Hearings
§2421. Obligation to Raise Issues and Provide Information During the Public Comment Period	§3119. Obligation to Raise Issues and Provide Information During the Public Comment Period
§2423. Reopening of the Public Comment Period	§3121. Reopening of the Public Comment Period
§2425. Issuance and Effective Date of Permit	§3123. Issuance and Effective Date of Permit
§2427. Response to Comments	§3125. Response to Comments
Subchapter F. Specific Decisionmaking Procedures Applicable to LPDES Permits	Chapter 33. Specific Decisionmaking Procedures Applicable to LPDES Permits
§2441. Purpose and Scope	§3301. Purpose and Scope
§2443. Permits Required on a Case-by-Case Basis	§3303. Permits Required on a Case-by-Case Basis
§2445. Fact Sheets	§3305. Fact Sheets
§2447. Public Notice	§3307. Public Notice
§2449. Conditions Requested by the Corps of Engineers and Other Government Agencies	§3309. Conditions Requested by the Corps of Engineers and Other Government Agencies
§2451. Decision on Variances	§3311. Decision on Variances
§2453. Special Procedures for Decisions on Thermal Variances under Section 316(a) of the CWA	§3313. Special Procedures for Decisions on Thermal Variances under Section 316(a) of the CWA
Subchapter G. Evidentiary Hearings for LPDES Permits—Reserved	Chapter 35. Evidentiary Hearings for LPDES Permits—Reserved
Subchapter H. Criteria and Standards for Technology-Based Treatment Requirements under Sections 301(b) and 402 of the Act	Chapter 37. Criteria and Standards for Technology-Based Treatment Requirements under Sections 301(b) and 402 of the Act
§2465. Purpose and Scope	§3701. Purpose and Scope
§2467. Definitions	§3703. Definitions
§2469. Technology-Based Treatment Requirements in Permits	§3705. Technology-Based Treatment Requirements in Permits
Subchapter I. Criteria for Issuance of Permits to Aquaculture Projects	Chapter 39. Criteria for Issuance of LPDES Permits to Aquaculture Projects
§2475. Purpose and Scope	§3901. Purpose and Scope
§2477. Criteria	§3903. Criteria
Subchapter J. Criteria for Extending Compliance Dates for Facilities Installing Innovative Technology under Section 301(k) of the Act—Reserved	Chapter 41. Criteria for Extending Compliance Dates for Facilities Installing Innovative Technology under Section 301(k) of the Act—Reserved
Subchapter K. Criteria and Standards for Determining Fundamentally Different Factors under Sections 301(b)(1)(A), 301(b)(2)(A) and (E) of the Act	Chapter 43. Criteria and Standards for Determining Fundamentally Different Factors under Sections 301(b)(1)(A), 301(b)(2)(A) and (E) of the Act
§2501. Purpose and Scope	§4301. Purpose and Scope
§2503. Criteria	§4303. Criteria
§2505. Method of Application	§4305. Method of Application
Subchapter L. Criteria for Determining Alternative Effluent Limitations under Section 316(a) of the Act	Chapter 45. Criteria for Determining Alternative Effluent Limitations under Section 316(a) of the Act
§2511. Purpose and Scope	§4501. Purpose and Scope
§2513. Definitions	§4503. Definitions
§2515. Early Screening of Applications for Section 316(a) of the Act Variances	§4505. Early Screening of Applications for Section 316(a) of the Act Variances

Previous Number	Current or New Number
§2517. Criteria and Standards for the Determination of Alternative Effluent Limitations under Section 316(a) of the Act	§4507. Criteria and Standards for the Determination of Alternative Effluent Limitations under Section 316(a) of the Act
Subchapter M. Criteria Applicable to Cooling Water Intake Structures Under Section 316(b) of the Act	Chapter 47. Criteria Applicable to Cooling Water Intake Structures under Section 316(b) of the Act
§2519. What Are the Purpose and Scope of This Subchapter?	§4701. What Are the Purpose and Scope of This Chapter?
§2520. Who Is Subject to This Subchapter?	§4703. Who Is Subject to This Chapter?
§2521. When Must I Comply with This Subchapter?	§4705. When Must I Comply with This Chapter?
§2522. What Special Definitions Apply to This Subchapter?	§4707. What Special Definitions Apply to This Chapter?
§2523. As an Owner or Operator of a New Facility, What Must I Do to Comply with This Subchapter?	§4709. As an Owner or Operator of a New Facility, What Must I Do to Comply with This Chapter?
§2524. May Alternative Requirements Be Authorized?	§4711. May Alternative Requirements Be Authorized?
§2525. As an Owner or Operator of a New Facility, What Must I Collect and Submit When I Apply for My New or Reissued LPDES Permit?	§4713. As an Owner or Operator of a New Facility, What Must I Collect and Submit When I Apply for My New or Reissued LPDES Permit?
§2526. As an Owner or Operator of a New Facility, Must I Perform Monitoring?	§4715. As an Owner or Operator of a New Facility, Must I Perform Monitoring?
§2527. As an Owner or Operator of a New Facility, Must I Keep Records and Report?	§4717. As an Owner or Operator of a New Facility, Must I Keep Records and Report Information and Data?
§2528. What Must the State Administrative Authority Do to Comply with the Requirements of This Subchapter?	§4719. What Must the State Administrative Authority Do to Comply with the Requirements of This Chapter?
Subchapter N. Incorporation by Reference	Chapter 49. Incorporation by Reference
§2531. 40 CFR Part 136	§4901. 40 CFR Part 136
§2533. 40 CFR Chapter I, Subchapter N	§4903. 40 CFR Chapter I, Subchapter N
§2535. Availability	§4905. Availability
Subchapter O. Criteria for Extending Compliance Dates under Section 301(i) of the Act—Reserved	Chapter 51. Criteria for Extending Compliance Dates under Section 301(i) of the Act—Reserved
Subchapter P. Criteria and Standards for Best Management Practices Authorized under Section 304(e) of the Act—Reserved	Chapter 53. Criteria and Standards for Best Management Practices Authorized under Section 304(e) of the Act—Reserved
Subchapter Q. Criteria and Standards for Imposing Conditions for the Disposal of Sewage Sludge under Section 405 of the Act—Reserved	Chapter 55. Criteria and Standards for Imposing Conditions for the Disposal of Sewage Sludge under Section 405 of the Act—Reserved
Subchapter R. Toxic Pollutant Effluent Standards and Prohibitions	Chapter 57. Toxic Pollutant Effluent Standards and Prohibitions
§2601. Scope and Purpose	§5701. Scope and Purpose
§2603. Definitions	§5703. Definitions
§2605. Abbreviations	§5705. Abbreviations
§2607. Toxic Pollutants	§5707. Toxic Pollutants
§2609. Compliance	§5709. Compliance
§2611. Adjustment of Effluent Standard for Presence of Toxic Pollutant in the Intake Water	§5711. Adjustment of Effluent Standard for Presence of Toxic Pollutant in the Intake Water
§2613. Requirement and Procedure for Establishing a More Stringent Effluent Limitation	§5713. Requirement and Procedure for Establishing a More Stringent Effluent Limitation
§2615. Compliance Date	§5715. Compliance Date
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§2619. DDT, DDD, and DDE	§5719. DDT, DDD, and DDE
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PERMIT NUMBER

LA0006041

AI No.: 2719

OFFICE OF ENVIRONMENTAL SERVICES
Water Discharge Permit

Pursuant to the Clean Water Act, as amended (33 U.S.C. 1251 *et seq.*), and the Louisiana Environmental Quality Act, as amended (La. R. S. 30:2001 *et seq.*), rules and regulations effective or promulgated under the authority of said Acts, and in reliance on statements and representations heretofore made in the application, a Louisiana Pollutant Discharge Elimination System permit is issued authorizing

Motiva Enterprises LLC
Convent Refinery
Post Office Box 37
Convent, Louisiana 70723

Type Facility: petroleum refinery facility
Location: Louisiana Highway 44 at Louisiana Highway 70 in Union
St. James Parish
Receiving Waters: Mississippi River (Outfalls 001 and 003)
Lake Pontchartrain via St. James Canal (Outfall 002)

to discharge in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, and III attached hereto.

This permit shall become effective on June 1, 2004

This permit and the authorization to discharge shall expire five (5) years from the effective date of the permit.

Issued on May 19, 2004

Karen K. Gautreaux
Deputy Secretary